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ABSTRACT

This study examined the dynamics and outcomes of the selection procedures of Chapter 1 programs in order to provide information needed for program reauthorization. Of central concern was the reason for variation in the student and school selection characteristics across districts. As information was analyzed and compared for Chapter 1 and non-Chapter 1 students, the following policy implications emerged: (1) Chapter 1 participation should be reduced in districts with low poverty occurrences; (2) in districts with poverty levels above 25% more high poverty schools should be eligible; (3) the use of the high concentration of poverty option should be restricted to high poverty districts; (4) the selection measures for students within a district must be uniform; (5) uniform selection standards must be applied for students eligible for more than one program; (6) greater use should be made of the schoolwide project option plan; (7) districts with small concentrations of deprived students should reexamine their selection practices; and (8) districts should be permitted to continue targeting grade bands. Data are presented on 46 tables and one figure in this report. Six appendices contain additional statistics from the study. (VM)

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SRA Report No. 486

# A STUDY OF TARGETING PRACTICES USED IN THE CHAPTER 1 PROGRAM

FINAL REPORT
Contract No. 400-85-1016

Christine T. Wood, *SRA Technologies*
Roy Gabriel, *Northwest Regional Educational Laboratories*
Camille Marder, *SRA Technologies*
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December 19, 1986

Prepared for:

U.S. Department of Education
Washington, D.C.

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## EXECUTIVE SUMMARY

### Overview of the Purpose of the Study

Using a case study approach, this study examined the dynamics and outcomes of the Chapter 1 program's school and student selection procedures in order to provide timely information to policy makers during the program reauthorization process. The central focus of the study was to explain why the characteristics of schools and students selected for program participation vary across districts. To understand better the dynamics and outcomes of the program's targeting processes, we linked two types of data in 30 purposively-selected districts which represent a range in district size, urbanicity, poverty, and achievement levels. First, we collected detailed information about each district's Chapter 1 school and student selection practices. Second, this information was coupled with each district's existing student-level data about many important characteristics of both Chapter 1 and non-Chapter 1 students, including achievement scores, poverty status, grade level, school attended, and participation in various categorical programs.

### Description of the Sample

- Chapter 1 schools in our sample have higher concentrations of poor students than non-Chapter 1 schools (53% poor in Chapter 1 schools and 36% in non-Chapter 1 schools). The poverty levels of Chapter 1 schools range from 1% to 100%.

- Students in Chapter 1 schools in our sample have lower reading achievement levels than students in non-Chapter 1 schools at the same grade bands (average score of 50 NCEs (50th percentile) for students in Chapter 1 schools and 58 NCEs (65th percentile) for students in non-Chapter 1 schools). Average achievement scores of students in Chapter 1 schools range from the 42nd percentile to the 78th percentile.

- Chapter 1 students, on the average, score nearly 1 standard deviation lower than non-Chapter 1 students in Chapter 1 schools. In our sample, the average achievement score of Chapter 1 students is at the 27th percentile (or 37 NCEs).

- About 71% of the Chapter 1 participants in our sample are poor compared to 53% of the students in Chapter 1 schools.

- Fifty-two percent of the students in Chapter 1 elementary schools in our sample who score below the 50th percentile in reading do not participate in Chapter 1. Using districts' definitions of educational deprivation, 37% of the educationally deprived in our sample of Chapter 1 schools do not participate in Chapter 1. About half of these students, however, participate in other categorical programs.

- The students defined as educationally deprived by their districts who do not participate in any categorical education program tend to score just below their district's cutoff for Chapter 1 program eligibility. They do not participate in any special programs because they are judged less in need than those who do participate.

- About 16% of the Chapter 1 students in our sample score above their district's criterion for eligibility. Ten percent of the Chapter 1 participants in our sample score above the 50th percentile. The unreliability of the instruments (e.g., tests, rating scales, grades, etc.) used to measure educational deprivation will result in students obtaining different scores on different administrations of the same test. At the school level, it may be determined that students who score above the cutoff for program eligibility have invalid scores and deserve to participate.

## Summary of Policy Implications and Findings

Reduce the participation in Chapter 1 by districts that have low average poverty and no high poverty schools.

- Fourteen percent of the schools in the sample having poverty levels at or below 12% are eligible for Chapter 1. On the other hand, 30% of the schools in our sample with poverty levels above 20% are not eligible because their poverty levels are below their district's average. When the 25% rule is used, 7% of the schools with poverty over 20% are still ineligible.

- Low-poverty Chapter 1 schools are often a direct result of the participation in the program of low-poverty districts. Low-poverty schools are eligible for Chapter 1 funds when they have poverty levels above their district's (low) average. Although Chapter 1 allocations to low-poverty districts are relatively small, they add up to about $400 million annually.

Within districts with poverty levels above 25%, allow more high poverty schools to be eligible and encourage districts to serve them.

- High-poverty non-Chapter 1 schools result from schools being below their district's (high) poverty average and having slightly fewer than 25% low-income students. In some cases, they result from schools being in high-poverty districts which for reasons of stability or educational philosophy serve only their very neediest schools.

Restrict the use of the uniformly high concentration of poverty option to high-poverty districts and provide more technical assistance in its use.

- The uniformly high concentration of poverty option can be used by a district with all low-poverty schools, since the poverty range in such a district would be less than 10%. Under such circumstances, use of the option will contribute to the presence of low-poverty schools in Chapter 1.

- Misunderstandings about the appropriate way to apply this option caused some districts in our sample to use it in a variety of ways, not all of which are in accordance with the legislation.

Require that districts enforce uniform standards and measures for selecting Chapter 1 students across all schools in the district.

- Compared to others in the sample, districts that have relatively higher proportions of unserved low-achieving students and higher proportions of higher-achieving Chapter 1 participants tend to lack uniform student selection standards. Methods for selecting students in these districts vary from school to school.

Encourage districts through technical assistance to have comprehensive policies addressing the issue of assigning to appropriate programs students who are eligible for more than one program.

- Of those students defined as educationally deprived by their districts, 18% receive special services from other programs such as special education, a bilingual/ESL program, a migrant program, or a state compensatory education program. Participation in other categorical programs decreases an educationally deprived student's chances of participating in Chapter 1, even though he/she may be among those in greatest need. For example, many of the most educationally deprived students in our sample participated in special education and not in Chapter 1.

Clarify how the formerly eligible student selection option is to be used.

- Most districts in our sample do not apply the formerly eligible student selection option in a way consistent with the legislative framework. Students who are no longer educationally deprived but who were in Chapter 1 the previous year are being retained in the program under this option. About 35% of the higher-achieving Chapter 1 students were program participants the previous year.

Encourage greater use of the schoolwide project option, if there is an interest in having districts with high poverty schools increase their flexibility in selecting students for Chapter 1.

- Currently both in our sample and nationally, few districts that have schools with poverty levels qualifying them for the schoolwide project option are using it. Within large districts, while increased use of the option might increase the number of higher achievers participating, the average achievement level of Chapter 1 students would remain low. In addition, the proportion of poor students in a large district's Chapter 1 program is likely to increase by using the schoolwide project option.

Encourage districts that have small concentrations of educationally deprived students in their Chapter 1 schools to re-examine their school and student selection practices.

- Districts that have more openings for students in the Chapter 1 program than they have educationally deprived students in their Chapter 1 schools may fill remaining openings with higher-achieving students. These types of districts typically contain students having an average reading achievement score well above the national average. For some districts in these circumstances, it would be possible to serve more of the schools that are eligible for Chapter 1 funds and serve fewer students per school. This would decrease the presence of higher achievers in their Chapter 1 program.

Continue to permit districts to choose the grade bands (or school levels) to target.

- Both within our sample and nationally, districts' application of the grade band option has meant that Chapter 1 schools are more likely to be elementary schools. In our sample, 74% of the elementary schools, 49% of the middle schools, and 22% of the high schools receive Chapter 1 funds. The poverty rates in the high schools in our sample are lower than those of the junior high/middle schools. The elementary schools have the highest average poverty of the three. Hence, the current practice of targeting fewer schools at the upper grade levels corresponds with the lower proportion of poverty in the high schools.

# I. INTRODUCTION

## Overview of the Chapter 1 Program

Since the passage of ESEA, Title I over 20 years ago, federal investments in Title I and its successor, Chapter 1 of ECIA, have totaled over $45 billion. The purpose of Title I and Chapter 1 programs has been to provide funds to state and local educational agencies "to meet the special needs of educationally deprived children" (Section 552, Education Consolidation and Improvement Act, 1981). Both programs were designed on the premise that children living in poor households or in poor neighborhoods are more likely than other children to have problems in school. Consequently, the legislation allocates funds to states and counties primarily on the basis of the number of school-age children from low-income families who reside in each school district. Funded districts must then select schools to participate, usually based on the relative concentrations of low-income students living in their attendance areas. Participating schools in turn select students on the basis of their educational need, not on the basis of their family's income.

## Concerns About Chapter 1 School/Student Selection

The number and nature of schools that have Chapter 1 projects results from the interaction of several factors, including: (a) a funding formula and funding levels that permit more than 90% of all the nation's public school districts to participate in the Chapter 1 program, and (b) district officials' use of Chapter 1 school selection provisions, which contain enough exceptions and options to permit operation of the program in approximately 70% of the nation's public elementary schools and about 35% of all public secondary schools (National Assessment of Educational Progress, unpublished tables). Since in about 25% of the nation's schools less than 7% of the students are from low-income families (Kennedy, Jung, & Orland, 1986), it appears that some schools with relatively small proportions of low-income students receive Chapter 1 funds.

The selection of low-achieving students within targeted schools to participate in Chapter 1 has also been the object of considerable scrutiny. The Study of the Sustaining Effects of Compensatory Education in Basic Skills (SES) (Breglio, Hinckley, & Bael, 1978) reported that 40% of low-achieving students from low-income families were selected for Title I, and that an additional 14% received some other form of compensatory education. Twenty-six percent of non-poor low-achieving students were selected for Title I and 16% for other compensatory education. The report concluded that the group of students with the greatest proportion selected for Title I was the economically and educationally deprived. Cooley (1981) used the same data base, organizing students in different selection categories, and concluded that more Title I students were neither low-achieving nor poor than were low-achieving and poor, and that the majority of poor, low-achieving children were not in the program.

A more recent report from the Office of Educational Research and Improvement (OERI) (Kennedy, et al., 1986) used a wide selection of data to summarize information about the intended recipients of Chapter 1/ Title I services. One of the analyses, which again used SES data, found that while 60% of students scoring below the 25th percentile on a reading test in 1976 were not receiving Title I services, over 10% of students who scored above the 50th percentile were receiving Title I services. The District Practices Study (Advanced Technology, Inc., 1983) also suggested that students with widely varying achievement levels received Title I services. Thus, while data indicate that low-achieving students are receiving Chapter 1 services, these data also show that some very low-achieving students are not served by Chapter 1 while students who appear to have less need are being served.

## Limitations of Previous Research

Previous studies of the Title I/Chapter 1 targeting and selection process, while addressing many questions about the population served by the program, have been unable to explain how or why the population of participants ends up as it does. Specifically, they could not account for the presence in the Chapter 1 program of low-poverty schools or higher-achieving students, nor for the absence of some higher-poverty schools and lower-achieving students. They also had only limited information to indicate whether unserved, low-achieving students were already receiving service from another categorical program. Although they were able to describe the variation across districts and schools in which students are selected for Chapter 1 participation, they could not link specific targeting options or selection methods to these variations and to the characteristics of the students ultimately served. Furthermore, these studies did not collect data that would permit the simulation of alternative school or student selection methods and estimate the effect of the various methods on the population served by Chapter 1.

## The Current Study

Approach. We have designed this study to address these and other issues concerning the operation and net effect of the program's school and student selection provisions. The study uses the case study method to examine the process of determining which students will participate in Chapter 1. We selected a sample of 30 Chapter 1 districts to represent a range of size and urbanicity, including urban, suburban, and rural districts that had collected districtwide achievement and program participation data on their students. Tables 1 and 2 present the characteristics of these districts. (See Appendix B for a more detailed discussion of site selection.)

## Table 1

### Number of Districts in Sample by Enrollment Size and Urbanicity

| Enrollment Size | Urbanicity | | | Total |
|---|---|---|---|---|
| | Urban | Suburban | Rural | |
| Over 54,000 | 4 | | | 4 |
| 10,000 - 54,000 | 8 | 2 | | 10 |
| 2,500 to 10,000 | 2 | 2 | 3 | 7 |
| 1,000 to 2,499 | | 2 | 3 | 5 |
| Less than 1,000 | | 2 | 2 | 4 |
| Total: | 14 | 8 | 8 | 30 |

## Table 2

### Number of Districts in Sample by Achievement Level and Poverty Range

| Achievement Level | Poverty Range | | | | |
|---|---|---|---|---|---|
| | 0-12% | 13-20% | 21-50% | >50% | Total |
| 46-47 | | | 2 | 4 | 6 |
| 48-52 | 1 | 2 | 5 | 3 | 11 |
| 53-56 | | 1 | 5 | | 6 |
| 57-66 | 4 | 2 | 1 | | 7 |
| Total: | 5 | 5 | 13 | 7 | 30 |

Note. Achievement levels are in terms of reading achievement on standardized tests measured in normal curve equivalents (NCEs) and poverty levels generally represent the percentage of students participating in the National School Lunch Program. (NCEs are normalized standard scores with a mean of 50 and a standard deviation of 21.06. Because the scale is normalized, it is assumed to be equal-interval.)

As the tables show, the sampled districts represent a wide range of enrollment, poverty, and reading achievement, although high poverty districts were deliberately oversampled. Because of the requirements of this study in terms of the format, content, and availability of student data,[1] the sample comprises a select group of local education agencies that have complete and accessible data on their student population for at least several grade levels. Thus, while specific results, such as percentage of students served, are not generalizable to the country as a whole in the same way they are when a stratified random sample is used, this study has the advantage of having enough data to completely describe the targeting process and its outcomes in a number of widely varying districts.

While specific study findings are not generalizable, simulations performed in the study reveal the interaction of various distributions of poverty and achievement with the mechanics of school and student selection for Chapter 1. By examining within our sample what could happen given extreme circumstances in a district, we can discuss with some confidence the "best" and "worst" cases of the use of a particular targeting option. Thus, while we cannot predict the incidence of a particular outcome across the country, we can say that, given certain district conditions, the use of a specific targeting procedure will result in that outcome.

Data collected. Study staff visited each site in the sample and collected both quantitative and qualitative data on school and student selection procedures, the rationales for these procedures, and relevant district, school, and student characteristics. Data were collected from each district to permit a complete description of the district's school/ student selection practices, including the poverty and achievement levels of participating and nonparticipating schools and students. Site visitors obtained any quantitative data used to select students for Chapter 1, including information such as test data, teacher ratings, basic reading levels, and others.

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[1] See Appendix C for a description of the procedures involved in the preparation of the district data sets.

Issues examined. As well as producing more recent data, this study offers a more detailed description of Chapter 1 school/student selection practices than previous studies because these practices are examined within as well as across individual districts. This permits us to address such questions as:

- Why are some schools with very low poverty concentrations receiving program services while other schools with very high poverty concentrations are not?
- Why do some students with relatively high achievement levels obtain Chapter 1 services when many very low-achieving students do not?
- How do districts use the various school and student selection options contained in the program's legal framework?
- How are Chapter 1's school and student selection decisions affected by the presence or absence of other programs with goals or target populations that overlap with Chapter 1?
- Have program targeting practices and outcomes changed in recent years?

Thus, in many cases, the study is able to explain what decisions or practices led to a particular service pattern in one or a group of districts. The study examines targeting in each district from the standpoint of whether district targeting objectives are being achieved as well as from the more general standpoint of the interaction within the district between poverty, achievement, and Chapter 1 participation. Further, by using student-level data obtained from each district, the study simulates changes in district targeting practices to determine what the outcome of such changes would be in terms of the population of students receiving service in that district.

Relationship to other current studies of Chapter 1. This study is one of a group of studies funded by OERI (formerly the National Institute of Education) in compliance with a 1983 Congressional mandate to provide descriptions and assessments of various critical aspects of Chapter 1. Other studies in this group will describe Chapter 1 in terms of services delivered, service recipients, background and training of teachers and staff, allocation of funds, coordination with other programs, and effect of programs on students' skills, school attendance, and future education. Together with this study on Chapter 1 targeting, these studies will be used by OERI to provide Congress with information for the reauthorization of Chapter 1, scheduled for 1987. The results of this study, in conjunction with targeting findings from the nationally representative surveys of the National Chapter 1 assessment, will be of particular interest to policy makers who are concerned about how best to direct Chapter 1 services to their intended beneficiaries.

## Content of the Report

The second chapter of this report begins with a discussion of the context in which Chapter 1 targeting decisions are made, including state and local characteristics as well as legislation and funding levels. The third chapter describes school targeting, or the process of selecting for Chapter 1 participation those schools whose students are most likely to be from low-income families. This section includes a discussion of the effects of including low poverty districts in Chapter 1, the effects of various targeting options, and the effects of district decisions to concentrate services at particular grade levels or to spread services across all grades.

The fourth chapter concerns student selection, or the process of locating low-achieving students within Chapter 1 schools. This discussion presents data from our sample on the educationally deprived students in Chapter 1 elementary schools who do not participate in Chapter 1 reading, and describes the reasons these students are not participating. Also examined are the reasons for the presence in the program of participants who are not educationally deprived. This chapter also includes a description of the four student selection strategies used by districts in the sample, and presents simulations used to compare the results of the selection strategies.

The fifth chapter summarizes the findings of the school and student selection chapters, and offers suggestions for possible policy changes. The sixth chapter discusses Chapter 1 services to non-public school children, and recent changes in school or student selection practices in the sample districts.

# II. THE CONTEXT OF CHAPTER 1 SCHOOL AND STUDENT SELECTION

To understand how district officials go about selecting schools and students to participate in the Chapter 1 program, we first summarize the program's basic targeting rules and options as well as examine program targeting practices from a national perspective. To illustrate how school and student selection practices can evolve over time and how federal rules can interact with changing state and local circumstances, we then describe the evolution of the Chapter 1 school and student selection procedures for one district, from the inception of Title I through the early years of Chapter 1. In the third section, we combine these two perspectives. We draw on what is known about the factors affecting local implementation of Chapter 1 and present a framework for examining the district's school and student selection procedures.

## Part 1. National Perspective: The Chapter 1 School and Student Selection Provisions

### Basic Rules for Determining School Eligibility

Chapter 1 legislation states that programs are to be "[c]onducted in attendance areas having the highest concentrations of low-income children" (§556(b)(1)(A)-(C) of Chapter 1 of the Education Consolidation and Improvement Act; 47 Federal Register, July 29, 1982, p. 32863, §200.49). (Unless otherwise noted, all citations refer to sections of the Chapter 1 statute or regulations.) Each district can determine, for example, (a) the type of data to be used to assess economic need, (b) the measure to be used to order its attendance areas, and (c) the grade spans that will be involved. The flexibility afforded by the federal legal framework is increased by the presence of various targeting exceptions. While the inclusion of these exceptions gives greater latitude to LEAs, it also increases complexity, as will be evident in the description of the legal provisions presented below.

In identifying eligible school attendance areas (SAAs), historically districts have been required to use the best available type of data--which may be a composite of several indicators--for determining the concentration of low-income families (§122(a)(1) of Title I; §201.51, 46 Federal Register 5167-5168 (January 19, 1981). According to data from the District Practices Study (Advanced Technology, 1983), in 1981-82, 77% of the LEAs used counts of students participating in the National School Lunch Program; 36% used enrollment in Aid to Families With Dependent Children (AFDC); and 19% used census data on family income. Fewer than 10% of the districts indicated using other types of information such as Free Breakfast counts or employment statistics. Some districts use more than one type of data, and this accounts for the total exceeding 100%.

The "concentration" of low-income children may be measured in terms of the number of children from low-income families in the SAA or the percentage of such children, according to the Nonregulatory Guidance provided by the U.S. Department of Education (June 1983, pp. 7-8). The SAAs are then ordered according to poverty concentration using (a) percentage, (b) number, or (c) a combination of these two (§200.50(a)(2), 51 Federal Register 18409 (May 19, 1986)). All the SAAs in a district may be ranked together, or grade-band groups of SAAs may be ranked separately. For example, using the latter method, a district that contained elementary and middle schools would rank all the elementary schools in one group and all the middle schools in a separate group.

With the percentage method, the cutoff score for eligibility may be determined by one of two methods. In the first method an SAA is eligible if the percentage of children from low-income families in that area is equal to or greater than the percentage of children from low-income families in the district as a whole (Nonregulatory Guidance, U.S. Department of Education, June 1983, p. 7).

Under the second method, any SAA may be considered eligible in which 25% or more of the children are from low-income families, even if the districtwide average is substantially higher (§556(d)(1)). The 25% rule is intended to be used in those LEAs in which there are high concentrations of children from low-income families residing in many areas of the district. (Under §122(a)(1) of Title I, any SAA having a 25% or greater concentration of children from low-income families could be considered eligible if the total level of Title I and state compensatory education expenditures in the Title I areas served the year before remained at the same level in those areas or was increased.) Under Title I, 46% of the districts were eligible to use the 25% rule, and 37% of this group actually used it in school year 1980-81 (Advanced Technology, 1983).

When SAAs are ordered according to the number method, an area is eligible if the number in that area is at least equal to the average number of children from low-income families in each SAA in the district as a whole (Nonregulatory Guidance, U.S. Department of Education, June 1983, p. 7).

When a district uses a combination method, SAAs may be ordered on the basis of either their percentages or numbers of children from low-income families. The cutoff score for eligibility must be selected so that the total number of SAAs that the LEA identifies as eligible does not exceed the maximum number that would have been identified as eligible under the number or percentage method alone (Nonregulatory Guidance, U.S. Department of Education, June 1983, p. 8).

## Circumstances in Which All Schools are Eligible

There are two situations in which all schools in the district may be considered eligible for a Chapter 1 program. Chapter 1 programs may be operated districtwide in very small districts and in districts having uniformly high concentrations of poverty.

Very small districts. Local educational agencies with a total enrollment of fewer than 1,000 children may operate a Chapter 1 program in all attendance areas in the district (§556(1)(c)). Districts with very small total enrollments do not have to restrict eligibility to a subset of schools.

Uniformly high concentrations of poverty. This exception to the basic school selection rule applies to districts in which there is a similar incidence of children from low-income families among all schools in the district. Under this provision, all attendance areas in the LEA or in a particular grade span grouping are eligible to receive Chapter 1 funds (§556(b)(1)(B)).

The Nonregulatory Guidance (U.S. Department of Education, June 1983, p. 7) indicates that there is a uniformly high concentration of children from low-income families if the difference between the percentage of children from low-income families in the attendance area with the highest percentage and that with the lowest percentage is not more than the greater of 10% or one-third of the percentage of children from low-income families for the district as a whole. (This represents a change from the "no-wide-variance" option that existed under Title I (§122(a)(1)). Under the Title I regulations, the option could be used if the difference in percentages was not more than the greater of 5% or one-third the percentage of children from low-income families in the district (§201.51(d)(4), 46 Federal Register 5168 (January 19, 1981).)

The Nonregulatory Guidance further notes that districts that use this option must provide project services in all SAAs. In other words, a district that chooses to use this option cannot then decide to serve only a subset of the schools. In addition, Chapter 1 services must be made available to qualifying students in the LEA who are enrolled in private schools (U.S. Department of Education, June 1983, p. 8).

To determine whether it qualifies for this exception, a district computes the percentage of children from low-income families for each SAA, and calculates the difference between the lowest and highest SAAs. Then it computes the percentage of children from low-income families districtwide. If the districtwide figure is greater than 30% (we will refer to these as high poverty districts), the one-third multiplier should be applied; if it is less than 30% (low poverty districts), then the 10% rule is applicable. If it is equal to 30%, both rules produce the same percentage. The interpretation allows SAAs within "high poverty" districts to have a greater range of poverty (less concentration) and still qualify under this exception. In comparison, in "low poverty" districts the range cannot exceed 10%.

## Other Exceptions to the Basic School Selection Rules

Four other exceptions to the basic selection rules are contained in Section 3 of the Technical Amendments to Chapter 1. The exceptions are intended to accommodate situations that may arise in certain districts. These exceptions either define the circumstances in which a school that would otherwise be in the eligible pool can be skipped or a school that would otherwise not be in the eligible pool may be included.

Formerly eligible schools (§556(d)(4)). For those attendance areas or schools considered eligible in either of two preceding years, an LEA may continue to designate them as eligible for one more year. If an area or school was eligible in both of the preceding years, the Chapter 1 regulations indicate that it can retain an additional year's eligibility for each of the two previous years in which it was eligible (§200.50(b)(4)(ii), 51 Federal Register 18410 (May 19, 1986)). The option is intended to provide continuity of services in schools that would be otherwise ineligible because of minor or temporary fluctuations in the attendance area's population.

Services of the same nature and scope (§556(d)(5)). SAAs or schools that are otherwise eligible under the basic selection rules may be skipped if they are receiving similar services from nonfederal funds. Comparable services in these circumstances are ones that are of the same nature and scope as those provided by Chapter 1 (§200.50(b)(5), 51 Federal Register 18410 (May 19, 1986)). The intent of this option is to avoid duplication of services within a school. This option can only be used with the approval of the state education agency.

Higher incidence of educational deprivation (§556(d)(2)). Under this exception, a local educational agency may (with state approval) skip a higher ranked SAA if a lower ranked SAA has a substantially higher incidence of educational deprivation. This option represents the only instance in which educational deprivation may be considered in the school-selection process. If this option is used, the total number of SAAs eligible for Chapter 1 may not exceed the number identified under the basic selection rules. The state education agency can approve the use of this option only if it "finds that the selection will not substantially impair the delivery of compensatory education services to educationally deprived children" in Chapter 1 areas served by the district (§200.50(b)(3), 51 Federal Register 18409 (May 19, 1986)).

The enrollment option (§556(d)(3)). Under this option, a district may provide Chapter 1 services to public schools in otherwise ineligible school attendance areas if the proportion of children in actual daily attendance who are from low-income families is substantially the same as the proportion of such children in an eligible attendance area (§200.50(b)(2), 51 Federal Register 18409 (May 19, 1986)).

This exception was created to be used by schools in SAAs where economically advantaged students have chosen to attend nonpublic schools. Thus, although an SAA may be a high-income attendance area, a substantial proportion of the students who remain enrolled in the public school may be from low-income families. In such cases this option may be used to qualify the SAA for Chapter 1 funding.

## Overview

The basic plan for school targeting is that any school with poverty greater than the district average can be served. In recognition of the many and varied circumstances of districts, the legislation allows considerable latitude in the method of targeting schools. This is provided for in the form of the following options:

- 25% option
- very small districts
- uniformly high concentration of poverty
- formerly eligible schools
- services of the same nature and scope
- higher incidence of educational deprivation
- enrollment option

One or combinations of these options may be invoked by a district, depending upon such factors as district characteristics, the level of Chapter 1 funding, and district decisions to serve all eligible schools or to serve only some eligible schools. The flexibility allowed districts in school selection is achieved by increasing the complexity of the legal framework.

In practice, more Chapter 1 districts that must make school selection decisions use one or more of the options than use only the basic rules for school selection.

- Data from a national mail survey of Title I LEAs conducted in 1981 indicate that, of Chapter 1 districts that must make school selection decisions, 28% used the "no wide variance" option (Advanced Technology, 1983). Preliminary data from OERI from a 1985-86 survey indicate that approximately 40% used the broader Chapter 1 "uniformly high concentration" option.

- In 1981, 14% of Title I LEAs reported using the 25% rule, and in 1985 preliminary OERI data indicate that an even higher percentage of Chapter 1 districts use the option.

- In 1981, slightly over 45% of Title I LEAs used the "enrollment option." Preliminary data from OERI indicate that fewer than 30% of Chapter 1 LEAs currently use the option.

One of the important differences among districts that the flexibility in school targeting was intended to accommodate is differences in rates of poverty. A ranking of districts nationwide by percent of poor students served in 1980 shows that in the districts in the lowest quartile, fewer than 7% of their students come from poor families. In contrast, the highest quartile contains districts with poverty concentrations ranging from 21% to 100% (Kennedy, et al., 1986). Districts in all four poverty quartiles participate in Chapter 1. Thus the program's funding formula and funding levels in conjunction with Chapter 1 school selection provisions permit the entry of low poverty schools into the program while some of the high poverty schools in the nation do not receive program services. These issues are investigated in some depth in Chapter 3 of this report.

## Basic Rules for Determining Student Eligibility

Chapter 1 legislation states that the program is intended "to meet the special needs of educationally deprived children" who reside in eligible areas (§555(c)). Educational deprivation becomes the primary criterion for determining which students are eligible to participate and who from that group should receive services. As is the case in the school selection process, districts are allowed great latitude in their identification procedures.

The early Chapter 1 regulations define "educationally deprived children" as "children whose educational attainment is below the level that is appropriate for children of their age" (§200.3(b), 47 Federal Register 52344 (November 19, 1982)). An LEA may use information and criteria of its choice to identify educationally deprived children, according to the Nonregulatory Guidance (U.S. Department of Education, June 1983, pp. 10-11). The types of data (or a composite of them) may include standardized test score data, results of informal diagnoses, records of academic performance, and observations by professional staff. However, regardless of what information and criteria it uses, an LEA must conduct an annual needs assessment, one of the purposes of which is to identify educationally deprived students in eligible attendance areas (§556(b)(2); §200.50, 47 Federal Register 52348 (November 19, 1982)).

The legislation provides that educationally deprived children in eligible attendance areas be identified. This highlights an important difference in eligibility for Chapter 1 and eligibility for most other programs. Although a student must be educationally deprived to be eligible, educational deprivation alone does not guarantee eligibility. Due to the two-stage selection process, one must be deprived in terms of one's surroundings as well as one's achievement. The legislation was originally drafted based on the assumption that the reason some students in poor areas are low-achieving is due to the effects of the areas themselves. Title I and its successor Chapter 1 are intended to compensate for these detrimental effects. Consequently, eligibility is established by residing in a poor attendance area of the district and by being among the students in "greatest (educational) need" in one's school.

"Greatest need" is not defined in the Chapter 1 legislation; however, Chapter 1 provides for an annual needs assessment "which... requires, among the educationally deprived children selected, the inclusion of those children who have the greatest need for special assistance...." (§556(b)(2); §200.51(a)(2), 51 Federal Register 18410 (May 19, 1986)).

While the legislation requires that students "in greatest need" in eligible schools be included among the educationally deprived students selected, the choice of a cutoff criterion for Chapter 1 services is determined at the district level, and no direct guidance is provided in the law or the regulations as to what specific criteria should be used. In practice, one district may deem eligible all students scoring below the 25th percentile on a given test. Another district may define as eligible those scoring below the 50th percentile, and then may elect to serve only a portion of this group. Often professional judgments about who should participate in Chapter 1 are also involved in the student selection process.

Students in non-public schools (§556(b)(2)). Whatever operational definition of educational deprivation is used by a district to determine eligibility, it is to be applied to all students who reside in eligible school attendance areas. Educationally disadvantaged students attending nonpublic schools who live in a school attendance area served by Chapter 1 are eligible to participate in the program. Such children are eligible regardless of whether the private schools they attend are inside or outside the LEA.

## Circumstances in Which All Students in a Project School are Eligible

Under certain circumstances all children in a school may participate in the Chapter 1 program. These circumstances, described in the schoolwide project provision, represent the only situation in which economic need can be used as the basis for student selection.

Schoolwide project. The 1983 Technical Amendments include a provision that allows an LEA to design a project "to upgrade the entire educational program" in a school if not less than 75% of the children are from low-income families (§556(d)(9)). In such instances, all students in the school may be identified as eligible and may receive Chapter 1 program services. However, the district must comply with certain planning requirements and must contribute funding for the schoolwide project in proportion to the percentage of non-educationally deprived children in the school. The SEA must approve the plan for a schoolwide project.

## Other Exceptions to the Basic Student Selection Rules

Section 3 of the 1983 Technical Amendments allows exceptions to the basic student selection rules that, in two of the three cases, are analogous to the exceptions to the school selection rules. Just as was the case with the school targeting exceptions, the student selection exceptions are attempts to tailor the basic selection rules to diverse local circumstances.

Formerly eligible students (§556(d)(6)). Children no longer in greatest need, but who were in greatest need in any previous year may continue to be served as long as they continue to be educationally deprived. The intent of this provision is to allow students to remain in the program even though they may not be currently most in need of special assistance in order that they have an opportunity to consolidate or sustain whatever educational gains they may have achieved the preceding year. The current Chapter 1 regulations limit the use of this option to districts that "serve only children in greatest need for special assistance" (§200.51(b)(1)), 51 Federal Register 18410 (May 19, 1986).

Comparable services (§556(d)(8)). An LEA is not required to serve educationally deprived students in greatest need if such students are receiving services from other nonfederal sources that are similar in nature and scope. (This usually means services from state and local compensatory education programs.) Such students may be skipped in favor of less needy students who are not receiving comparable services (§200.51(b)(3), 51 Federal Register 18410 (May 19, 1986)).

Transferred participants (§556(d)(7)). The Technical Amendments permit an LEA to continue to serve an educationally deprived student who began participation in a program in one school and was transferred during the school year to a nonparticipating school. This exception might be used, for example, in circumstances in which districts have re-assigned students to schools in the midst of the school year to achieve racial balance. To achieve continuity of educational services and to ensure that a student's special educational needs are still addressed despite reassignment to a non-Chapter 1 school, such a student is still entitled to participate in the Chapter 1 program (§200.51(b) (2), 51 Federal Register 18410 (May 19, 1986)).

## Overview

The Chapter 1 statute and regulations require that students who are "educationally deprived in greatest need" in eligible attendance areas be included among those students selected. The criteria for educational deprivation are left to each district's discretion, and greatest need is determined by an annual needs assessment. Exceptions to serving students currently in greatest need in eligible attendance areas may be made under the following options:

- schoolwide project;
- formerly eligible student;
- comparable services; and
- transferred participants.

The literature on Title I student selection reveals a variety of district targeting practices (Advanced Technology, 1983). It also provides a picture of the level of educational deprivation that exists among the students who are selected to participate through the application of various combinations of school and student targeting rules.

In 1983-84, Chapter 1 participants' average reading achievement generally fell below the 30th percentile, showing that these students are substantially more disadvantaged than non-participants. However, an earlier national study of Title I participants in the elementary grades (Breglio, et al., 1978) showed that 60% of students scoring below the 25th percentile on a reading test in 1976 were not receiving Title I services. At the same time over 10% of the students who scored above the 50th percentile were participating. The degree to which the flexibility and complexity of the legal framework governing student selection for Chapter 1 contributes to these findings is examined in the fourth chapter of this report.

## Part 2. Local Perspective: The Evolution of Chapter 1 School and Student Selection in Mill City

Having described the legal framework for selecting Chapter 1 schools and students, we now turn to an examination of the evolution of targeting practices in a particular district. Then, in Part 3 of this chapter, we use that case to illustrate a more general model of the district dynamics for selecting program schools and participants. The district in our example, which we call Mill City, is real. It is an urban district in a midwestern state serving a city of approximately 370,000 inhabitants. The case does not typify LEA practices in school targeting and student selection, but was selected because of the insights it provides into the way such practices evolve and the variety of factors which mold them.

Mill City's first Title I application was completed in the spring of 1966 by the new Director of External Funding. Since he and the program were new, the director relied heavily on guidance from the SEA in designing the program. The district had to conduct a needs assessment to identify educationally deprived students and to determine their educational needs. The local director accomplished this by reviewing district standardized test scores, asking classroom teachers to list students in their classes who needed additional help, and asking teachers and principals what sort of special assistance would be most valuable to provide to students. He intended to begin modestly, serving only a few schools, with the thought of expanding if funding allowed. This strategy was also influenced by resistance from several principals to the proposed program, who were suspicious that it would disrupt school routines, use valuable space, and dissipate their control.

The state program coordinator suggested that the funds would make the greatest impact at the elementary level. The director shared that philosophy, and noted that certain elementary principals were most receptive. District achievement test scores were lower in reading than in math, and the needs assessment survey of elementary teachers supported a reading focus. The new program in this district was accordingly designed to serve educationally deprived elementary school students in reading.

Federal legislation required that the program be targeted at school attendance areas having high concentrations of children from low income families. The instructions provided by the state suggested using counts of students receiving free lunch through the National School Lunch Program to measure the incidence of poverty in schools, and the state Title I coordinator further recommended that the percent of students receiving free lunch, rather than the actual number, be used to compare schools. The district's 70 elementary schools were ranked, and five with the highest percent of students from low income families were selected, although more than 20 schools were above the average district poverty incidence of 24% and thereby eligible for the program according to the state's interpretation. The program was to be housed in one school to minimize the need for staff, space, and equipment. Students from other eligible schools were to be transported to the central location in a van.

Instructions from the state dictated the use of standardized, norm-referenced test scores to identify educationally deprived children, serving lowest scoring children first. According to these state instructions, children scoring above the 49th percentile were not to be served, but the LEA could determine its own cutoff score to establish eligibility. The LEA routinely tested students only at grades 3, 6, and 8, however, so no scores were available for children in other grades. The director responded by asking classroom teachers in all grades in Chapter 1 schools to refer students they believed needed special instruction in reading. The referred students were tested by the Title I teacher, and if they scored at or below the 40th percentile, they were placed in the program.

The decision to set a cutoff score at the 40th percentile represented the director's view that the help provided by Title I should be available to any student in a targeted school who truly needed it. The cutoff was lower than the maximum allowed by the state, but it was generous enough to qualify most students who were educationally deprived in reading. Since students would be identified only if they were first referred by a classroom teacher, administrators expected that far fewer than 40% of the students in a school would be placed in the program. The initial needs assessment, in which teachers were asked to identify the students in their classes who needed additional help to master basic skills, suggested that around 15% of the students in an elementary school would be referred. There was no accurate way for Title I administrators to know how many low achieving students in the targeted schools were not referred by their teachers.

The program grew quickly in the years between 1967 and 1973. As funding increased, resistance faded, and the director felt confident about administering a larger program. By 1970, the use of vans was discontinued, and students were served in all 29 elementary schools whose poverty levels were above the district average percentage of children receiving free lunch. Funding continued to increase, prompting the director to consider expanding the program into junior high and high schools. The director held informational meetings and surveyed parents, teachers, and principals at the junior high and high school levels, and found interest in expanding the program. In 1971, the Title I program was extended to include all grades. In 1972, the director noted that more children in the district were scoring lower in math than in reading, and a math program was added. Throughout these years, the LEA continued to use the same procedures initiated during the first year to identify schools and students, meaning that teacher referrals continued to precede testing to determine program eligibility.

In 1973, the district began implementing a court-ordered desegregation plan, and the distribution of children from low-income families underwent a dramatic change. As low-income students were bussed to more affluent schools, more schools and different schools qualified above the average poverty incidence. As more affluent students left the public schools, district enrollment began to drop quickly, and achievement fell as the average incidence of poverty rose. District targeting and selection procedures remained essentially unchanged, but more schools qualified for and received Title I services.

Beginning in 1979, rapid changes in the district began to affect Chapter 1 school and student selection procedures. First, the superintendent and the board of education decided that Title I classes at the high school should no longer count towards graduation credit. Eligible high school students had been receiving special instruction in reading and math through Title I in addition to regular language arts and math courses required by the district. Because the additional Title I activity was considered remedial, school authorities decided not to grant additional credit. Without credit, most students did not want to participate, and Title I enrollment declined. The SEA strongly recommended that the high school program be dropped, arguing that it served too few students, and was educationally less important. Title I administrators agreed. The parents of Title I high school students and the principal disagreed vigorously, and lobbied actively to maintain the program. The superintendent requested a study to evaluate the effectiveness of the high school program, and used its results to support dropping the program. The program was dropped. No subsequent changes were made in the grades served or subjects taught through 1986.

Also in 1979, the district decided quite independently of Title I to begin testing all students at all grades K-8 in the spring. For the first time, Title I administrators did not have to rely on teacher referral to identify educationally deprived children in the district. Suddenly, the number of eligible children grew. The Assistant Superintendent for Instruction noted this in reviewing the application, and requested that the Department of Research and Evaluation conduct a study to set new cutoff scores, now possible because of a new district computer system. The researchers recommended cutoffs at the 20th percentile in reading and the 35th percentile in math, and the Assistant Superintendent declared these to be policy. Title I administrators were stunned, and argued hard for a 35th percentile cutoff in both subjects. A compromise was reached--cutoffs would be established at the 25th percentile in reading and the 35th percentile in math, but referred students could be tested on several occasions, and could qualify on any one of them. The new procedure resulted in fewer students served in reading.

Following the change in cutoffs, a change was made in the targeting of the Title I program. Continuous growth in the number of low achieving students served by special education contributed to the decline in numbers of Title I participants. Special education students were declared ineligible for Title I by local policy. Consequently, the Title I/Chapter 1 program no longer spent all its funds. By 1984, more than $1 million had accrued in carryover funds, and the SEA demanded that the district find a way to expand its program. The Assistant Superintendent stood adamant against adjusting the cutoff criteria to identify more students. Chapter 1 administrators decided to serve five more elementary schools, using the option allowing districts to serve schools in which 25% or more of the students are from low-income families. They planned to drop service to those schools should their funding level decline in the future.

## General Attributes of Chapter 1 Targeting Decision Making

Mill City is first a reminder that the great majority of current Chapter 1 programs existed as Title I programs more than 10 years ago. In such longstanding programs, the selection of schools and students is often governed by procedures which were worked out long ago. When district changes (such as those discussed in Chapter 6) force changes in targeting procedures, the changes will usually be broad enough to accommodate the new local conditions, but no broader. Thus a change in targeting legislation will change district practices if it makes those practices non-compliant; new legislation is less likely to affect practices in a particular district if the changes add new procedures to the range of possible school or student selection methods.

In the course of 20 years, Mill City changed its student selection procedure twice and its school targeting procedure only once. Only two changes were made in the selection of grade span. Once procedures were established, they brought predictability and efficiency to the administration of the program, and a consensus of support for them was generally established. This ordinary reliance on "standard operating procedures" has been widely noted in respect to organizational behavior generally (e.g., March and Olsen, 1976; Pfeffer & Salancik, 1974) and in Chapter 1 programs specifically (Knapp & Richards, 1985).

A second observation illustrated by Mill City is that changes in external conditions trigger most changes in the targeting of Chapter 1 programs. These may include changes in district enrollments, boundaries, grade configurations, or other factors external to Chapter 1 legislation and programs. Demographic changes, brought on by desegregation or economic factors, may affect the number of eligible schools and the range of school targeting options. Changes in district testing practices or the availability of other special programs may produce a marked change in the number of eligible students. Compensating changes in student selection procedures, such as the changing of a cutoff criterion, may result.

Factors such as the perceptions of district administrators, SEA policies, and local demographic shifts can interact to affect targeting practices. The targeting procedures developed in Mill City, such as ranking schools by the percentage of students receiving free lunch and selecting students scoring below a certain score on a standardized test, were constrained by the range of options district administrators believed they had. This range was significantly restricted by the interpretation given by the state. SEAs have the responsibility for reviewing and approving LEA applications for Chapter 1 funds, and frequently provide guidelines and technical assistance to district Chapter 1 program staff. State agencies tend to interpret federal regulations concretely and tightly, in effect restricting the choices available to districts (Turnbull, 1983). In addition, a district's choice of school targeting options is determined by its size and distribution of poverty. When Mill City chose to qualify more schools using the 25% option, it could do so only because changes associated with desegregation had increased the number of schools with more than 25% low-income students.

Targeting choices in Mill City reflected beliefs and values of individuals representing different organizational levels. The principals' early resistance to the program, the program director's cautious advocacy, and the SEA coordinator's insistence on certain procedures are illustrative. Decision makers in Mill City brought differing perspectives to the question of which students were educationally deprived. Initially, this question was left to teacher judgment; a test score served only as confirmation. When districtwide testing made greater reliance on tests possible, the SEA coordinator and the local director saw this as an improvement. Teachers resisted, arguing that their judgment, based on a year of interaction, was more valid than performance on a single test.

The question was moot until the cutoff for student selection was lowered. That decision again highlighted a difference in perspectives between Chapter 1 administrators, who believed that moderately low achieving students would benefit from the program and should have an opportunity to participate, and other LEA administrators who believed the program was better restricted to the lowest achieving students. During periods of adjustment, such as this one, the decision process was as much political as rational: it involved the interaction of individuals representing differing organizational and value perspectives, employing persuasion and compromise, and its outcome reflected the relative influence each brought to the decision. To model such decisions requires consideration of both political and organizational factors (Allison, 1971; Cronbach, et al., 1980).

Finally, it should be noted that decisions regarding targeting practices occur in a context of existing program procedures and organizational structures outside the program which affect the cost or difficulty of implementing a change. In Mill City, the decision to reduce the student selection cutoff in reading from the 40th percentile to the 25th percentile was influenced by the fact that students were also served in math. If only reading services had been offered, such a change would have made the program too small.

Having presented the legal provisions within which Chapter 1 programs operate, and having shown how local considerations in Mill City determined the shape of the program within these legislative constraints, we now move to a general framework presenting the overall context within which Chapter 1 targeting decisions are made.

## Part 3. A Framework for the Context of Chapter 1 Targeting Decision Making

The context of Chapter 1 targeting decisions at the local level can be summarized through four sets of contextual factors: established practices, LEA resources, available options, and perspectives of decision-makers. The Mill City case provided an illustration of these four factors in a historical context, but their application is not restricted to a particular case. The categories emerged from a review of the 30 districts included in the present study. They parallel closely the general categories described by Lasswell (1971) in his social process model of policy making.

In this section, the contextual factors influencing Chapter 1 targeting decisions are defined and influences on them at the local, state, and federal levels are identified. Figure 1 graphically displays the relationship among these factors leading to Chapter 1 targeting outcomes.

Established practices. LEA Chapter 1 practices have evolved over a period of years, and now usually represent a stable "accustomization" of federal regulations and intent in a local setting (Jung & Kirst, 1986). Districts do not repeat annually the series of steps initially required to design and establish a Title I program, except on a pro-forma basis to satisfy monitors that the project is based upon a needs assessment. To decide anew each year what grades and subjects to include would be, in the view of Chapter 1 directors, to invite annual chaos and disruption. Grades and subject areas are changed very infrequently. Changes in participating schools occur more frequently, but the procedures through which both schools and students are selected remain highly stable.

LEA resources. The number of students that can be served in a district in Chapter 1 is partially determined by the resources available and how these resources are used. Resources are largely externally determined and include:

- size of the Chapter 1 allocation;
- availability of volunteers;
- district funded support; and
- other programs for educationally deprived students such as special education, state, and local compensatory education, bilingual programs, dropout prevention programs, and migrant education programs.

With a variety of programs, a local education agency can focus its Chapter 1 program more narrowly. With increased dollars, it can serve more students.

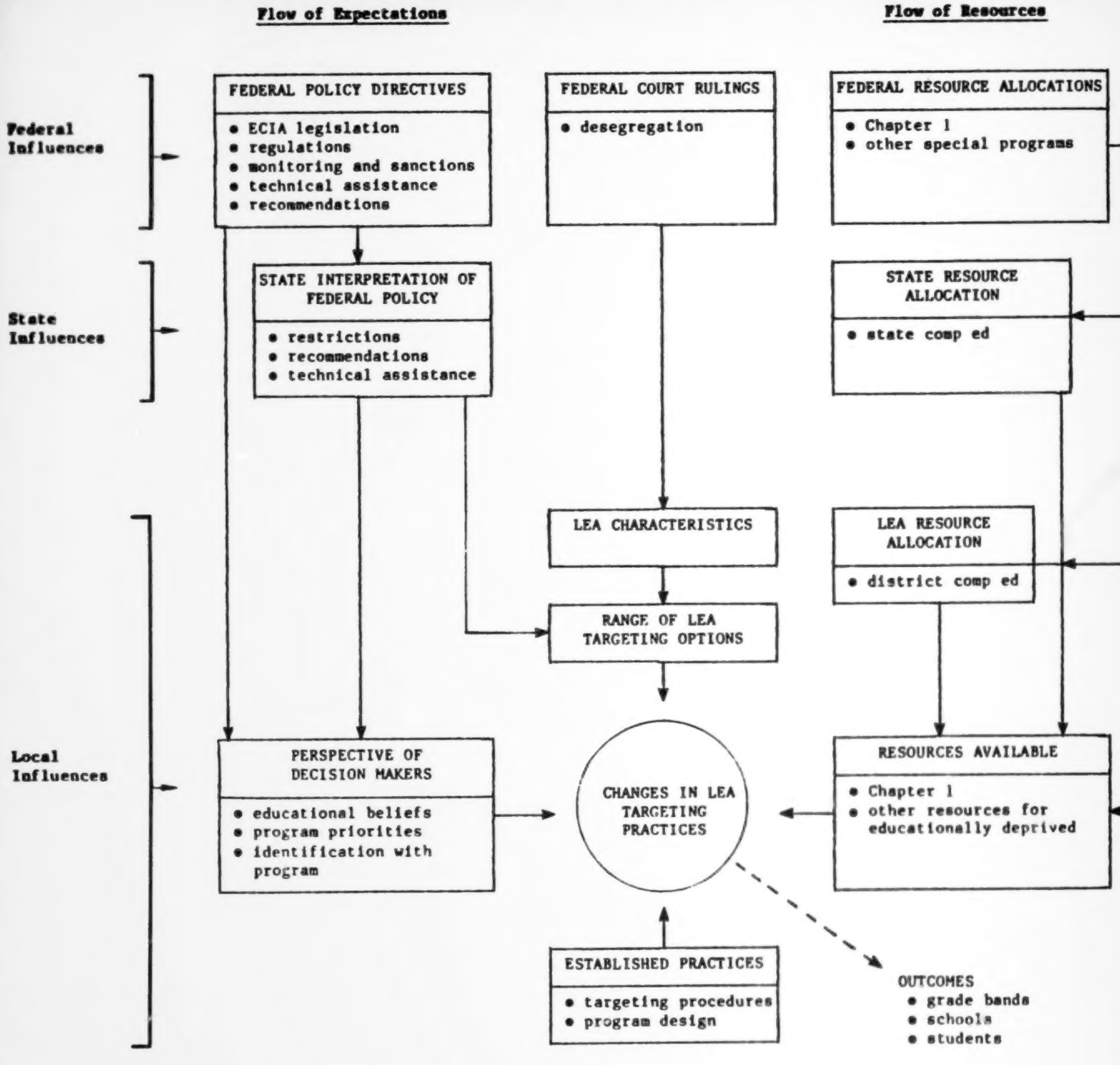
Flow of Expectations
Flow of Resources
Federal Influences
State Influences
Local Influences
FEDERAL POLICY DIRECTIVES
• ECIA legislation
• regulations
• monitoring and sanctions
• technical assistance
• recommendations
FEDERAL COURT RULINGS
• desegregation
FEDERAL RESOURCE ALLOCATIONS
• Chapter 1
• other special programs
STATE INTERPRETATION OF FEDERAL POLICY
• restrictions
• recommendations
• technical assistance
STATE RESOURCE ALLOCATION
• state comp ed
LEA CHARACTERISTICS
LEA RESOURCE ALLOCATION
• district comp ed
RANGE OF LEA TARGETING OPTIONS
PERSPECTIVE OF DECISION MAKERS
• educational beliefs
• program priorities
• identification with program
CHANGES IN LEA TARGETING PRACTICES
RESOURCES AVAILABLE
• Chapter 1
• other resources for educationally deprived
ESTABLISHED PRACTICES
• targeting procedures
• program design
OUTCOMES
• grade bands
• schools
• students

Figure 1. Conceptual model for the context of local targeting decisions.

Available options. The third factor affecting Chapter 1 targeting is the range of legal procedures and practices that may be considered by the LEA as it arrives at or changes its approach to targeting schools and selecting students. The use of federal targeting options by LEAs is often subject to state approval and interpretation as well as local conditions. For example, some states allow districts to use counts of students eligible for either free or reduced lunch as a measure of poverty, while others restrict counts to free lunch recipients only. This variation in state practice can affect the number of schools a district can qualify for Chapter 1 under the 25% poverty provision.

In addition, knowledge of the options by LEA decision makers will certainly affect whether they are used. Turnover in LEA positions may result in the loss of such knowledge. Because information concerning targeting options is disseminated by the state, local familiarity with options often reflects state approaches to communication and interpretation.

Perspectives. The fourth factor includes participants' beliefs, knowledge, and priorities. In particular, these include:

- Beliefs about where compensatory educational funds should be targeted. Do LEA decision makers believe that it is most important to assist students with basic skills in the primary grades, or do they believe that it is equally important to provide assistance to students at all grade levels? Do decision makers believe that the lowest achieving students are less likely to benefit from Chapter 1 assistance than students achieving only moderately below the norm?

- Standards of size, scope, and quality endorsed by decision makers. Such values affect LEA targeting practices by limiting the extent to which decision makers are willing to stretch limited resources.

- The value placed on continuity of service. It is disruptive to schools and staff to drop a program from a building where it has been in existence for several years, because the school no longer qualifies for Chapter 1 services according to the procedure used by the district. In this situation, do Chapter 1 administrators respond by targeting the school as "formerly eligible"?

The perspectives of local decision makers are influenced by the intent of federal policy and the extent to which they identify with it, by state recommendations, and by technical assistance provided by either federal or state sources. For example, a change in district targeting to include kindergarten in Chapter 1 may be influenced by a local belief that intervention should occur as early as possible. That belief, in turn, may have been influenced by a memorandum from the Director of Compensatory Education Programs of the U.S. Department of Education in December, 1985, encouraging districts to establish early childhood programs, and by a workshop sponsored by the SEA in which research evidence in support of early intervention was emphasized.

## Chapter Summary

In this chapter we have reviewed the targeting rules, options, and exceptions within which Chapter 1 targeting decisions must be made, and we have then showed how these legal requirements interact with other factors to influence a district's choice of school and student selection practices. A district's established practices, its available resources, targeting options, and the perspectives of local and state decision-makers can all influence its targeting decisions. As we show later in this report, unless a contextual factor changes, a district is likely to maintain the policies and practices of previous years rather than reconsider each Chapter 1 program decision every year.

# III. SCHOOL TARGETING

## Chapter Overview

Many districts must determine which schools will qualify for Chapter 1 funds as one of the first steps in the process of deciding which students receive program services. In this chapter we examine the process districts in our sample use to determine which schools will have Chapter 1 programs. We show that schools selected for Chapter 1 in our sample have more low-income, limited-English-proficient (LEP), and special education students and lower average achievement scores than do the non-Chapter 1 schools within the same districts.

Chapter 1 schools in our sample are, on the average, higher in poverty than the non-Chapter 1 schools at the same grade bands, although we find a wide range of poverty levels among both kinds of schools. Nationally, districts whose poverty levels are under 10% receive about $400 million annually in Chapter 1 funds (Anderson & Stonehill, 1986). The presence of these districts in Chapter 1 is problematic, and as we demonstrate in this chapter, it is their participation in the Chapter 1 program that is primarily responsible for the participation of low-poverty schools in the program.

In this chapter the use of school selection options and exceptions by districts in our sample is evaluated to determine how and the extent to which these options can contribute to Chapter 1 funding of low-poverty schools. We also document that, in our sample, the targeting options appear to be rarely misused and to be generally useful to districts in meeting their targeting goals. A possible exception to this is the uniformly high concentration of poverty option, which had limited utility for our sample and which is open to misuse by some districts.

Our sample also demonstrates that, while many low-poverty schools receive Chapter 1 funds, some high poverty schools (defined in this study as over 20% poor) do not receive funds, either because their poverty level is below 25% or their district average, or because of a district policy to serve only the most needy schools. The fact that many districts choose to exclude upper grade level schools from Chapter 1 does not necessarily contribute substantially to the exclusion of high poverty schools from the program, however, since as we will show, high schools tend to be lower in poverty than elementary schools.

In this chapter we also discuss the effects of averaging poverty within, rather than across, grade bands. Averaging within grade band tends to decrease the number of elementary schools qualifying for Chapter 1 funds, a fact that not all districts appear to be aware of.

Districts' use of school selection options appears to have less effect on the national composition of the Chapter 1 program than the poverty and achievement levels of districts qualifying for funds. From evidence presented in this chapter, there appear to be two options policy makers could use to improve Chapter 1's focus on children living in high poverty areas: (a) to specify a minimum poverty level for schools to qualify for Chapter 1 funds, and/or (b) to increase allocations to very high poverty districts.

## How do Chapter 1 Schools in Our Sample Differ From Non-Chapter 1 Schools?

Chapter 1 schools at the same grade bands vary greatly in terms of their student poverty levels, mean achievement, and proportions of students who are handicapped or LEP. In our sample of 30 districts, there are 682 Chapter 1 schools. Because the districts in the sample have a wide range of characteristics, so do their Chapter 1 schools. These schools have in common, however, the fact that they have the largest proportions of low-income students in their districts. In addition to their relatively high poverty, Chapter 1 schools differ from non-Chapter 1 schools at the same grade bands in that they have higher proportions of low-achieving students, LEP students, and special education students than do non-Chapter 1 schools.

Most Chapter 1 schools are elementary schools (as defined by their districts). In our sample, 74% of the elementary schools are Chapter 1 schools, while only 49% of the middle schools and 22% of the high schools are receiving Chapter 1 funds. The tendency of districts to restrict Chapter 1 programs to the elementary grades is widespread, and the rationales for and some effects of this focus will be discussed in more detail later in this chapter.

## What are the poverty levels of students in Chapter 1 schools in our sample?

In our sample, the percentage of low-income students in Chapter 1 schools ranges from 1.3% in a suburban district to 100% in an urban district. (In 83% of our sample districts, students participating in the National School Lunch Program are considered low income.) Table A-1 in Appendix A shows the percent of low-income students in the "average" Chapter 1 school in each of the 30 districts in our sample.[2] These average schools range from 2% low income to 98% low income. As we explain later in this chapter, the wide range is primarily a result of the range of districts with Chapter 1 programs. Chapter 1 schools are, as they should be, poorer than non-Chapter 1 schools within their own districts. In our sample, there is a 30% difference in poverty between the average of the two types of schools (see Table A-2 in Appendix A).

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[2] The average school was created by averaging school-level data within each district, without weighting by school enrollment.

Table 3 shows the distribution of students in targeted elementary grades in the 11 sample districts that have non-Chapter 1 schools and student-level poverty data. (Half the districts in the sample serve every school in their district at the targeted grade bands.) The Chapter 1 schools have a higher proportion of poor students than do the non-Chapter 1 schools (53% compared to 35%). Looking at the data another way, almost 75% of all poor students at these grades are in Chapter 1 schools.

Table 3

Student Poverty Distribution at Targeted Elementary Grades for 11 Sample Districts in Which Only Some Schools Receive Chapter 1 Funds

| Poverty Status | School Attendance: In Chapter 1 Schools N | % | School Attendance: Not In Chapter 1 Schools N | % | Totals N | % |
|---|---|---|---|---|---|---|
| Poor | 44,302 | 53.3 | 15,147 | 35.5 | 59,449 | 47.2 |
| Non-Poor | 38,816 | 46.6 | 27,546 | 64.5 | 66,362 | 52.7 |
| Totals: | 83,118 | 99.9 | 42,693 | 100.0 | 125,811 | 99.9 |

Note. Poverty data are available for only 11 of the 15 sample districts having non-Chapter 1 schools.

## What are the achievement levels of students in Chapter 1 schools in our sample?

The average reading achievement score in the Chapter 1 schools in our sample is 50.5, very close to the national average. District averages in the sample range from 46 to 66, with lower scores in the high poverty districts and higher scores in the less poor districts (see Table 4). Across the sample, non-Chapter 1 schools have higher average reading achievement scores than do Chapter 1 schools, with non-Chapter 1 schools having an average achievement score of 58 compared to an average score of 50.5 for Chapter 1 schools. Within our sample, Chapter 1 schools always have lower achievement scores than do the non-Chapter 1 schools in their districts (see Table A-3 in Appendix A).

Table 4

Mean Reading Achievement Scores in the Average Chapter 1 School and Non-Chapter 1 School in Our Sample

| District Poverty Range | Chapter 1 Schools |  | Non-Chapter 1 Schools |  | Chapter 1/ Non-Chapter 1 Difference |
|---|---|---|---|---|---|
|  | # of Districts | Mean Reading NCE | # of Districts* | Mean Reading NCE |  |
| Low to moderate poverty (0-12%) | 5 | 61 | 2 | 64 | -3 |
| Moderate poverty (13-20%) | 5 | 52 | 2 | 59 | -7 |
| High poverty (21-50%) | 13 | 51 | 8 | 56 | -5 |
| Very high poverty (over 50%) | 7 | 49 | 1 | 52 | -3 |
| Overall: | 30 | 51 | 13 | 58 | -7 |

Note. In this study, schools were divided into the four poverty groups (low to moderate, moderate, high, and very high) based on the district poverty quartiles used by Kennedy, et al., (1986). The bottom two district quartiles were combined to include more schools and the top quartile was broken up to separate the highest poverty schools, since this study oversampled high poverty districts.

*Districts having non-Chapter 1 schools for which data were available.

Table 5 compares the reading achievement quartile of students in Chapter 1 and non-Chapter 1 elementary schools in the targeted elementary grades in all 15 sample districts having non-Chapter 1 schools. It shows that a higher proportion of students in Chapter 1 schools than in non-Chapter 1 schools are in the bottom achievement quartile (19% compared to 9%), or the second quartile (29% compared to 23%). Looking at the numbers another way, almost three-fourths of all the students in the bottom achievement quartile in this group of districts are attending a Chapter 1 school.

Table 5

Student Reading Achievement Distribution at Targeted Elementary Grades for the 15 Sample Districts in Which Only Some Schools Receive Chapter 1 Funds

| Reading Achievement Status | School Attendance: In Chapter 1 Schools N | % | Not In Chapter 1 Schools N | % | Totals N | % |
|---|---|---|---|---|---|---|
| < 25 %ile | 17,360 | 19.3 | 5,917 | 9.0 | 23,277 | 14.9 |
| 25-50 %ile | 26,356 | 29.2 | 15,078 | 22.9 | 41,434 | 26.6 |
| > 50 %ile | 46,405 | 51.5 | 44,712 | 68.0 | 91,117 | 58.5 |
| Totals: | 90,121 | 100.0 | 65,707 | 99.9 | 155,828 | 100.0 |

What proportion of students in the sampled Chapter 1 schools are in special education or are limited-English-proficient?

In our sample, the average Chapter 1 school has 11% of its students participating in special education programs, with proportions ranging from 1% to 16% across the sample. Because special education classifications and participation levels vary widely from state to state, comparisons across our sample of proportions of special education students in Chapter 1 and non-Chapter 1 schools are problematic. Within eight of the 11 districts for which we had data to make the comparison, Chapter 1 schools have higher proportions of special education students than do non-Chapter 1 schools (see Table A-4 in Appendix A), although differences are quite small. Data from our sample suggest, then, that the presence of Chapter 1 services in a school does not reduce the number of children receiving special education services.

For the 13 districts in our sample that provided data on LEP students, 4.1% of students in Chapter 1 schools are LEP, ranging from 0.1% to 24.9% (see Table A-5 in Appendix A). In every district where Chapter 1 and non-Chapter 1 schools can be compared, there is a slightly higher proportion of LEP students in Chapter 1 schools than in non-Chapter 1 schools.

### Summary

In our sample, Chapter 1 schools are different from non-Chapter 1 schools in having higher percentages of students who are from low-income families, having lower mean achievement scores, and having higher percentages of limited-English-proficient students. These differences are most pronounced when they are examined within individual districts.

## What Accounts For The Presence of Low Poverty Schools in Chapter 1?

### Introduction

Of particular concern to policy makers has been the presence in the Chapter 1 program of schools having low concentrations of poverty. Questions arise as to how such schools are qualifying for a program designed to provide financial assistance to districts serving areas with concentrations of children from low-income families.

An examination of the poverty levels of eligible schools in the 30-district sample reveals that the low poverty schools that receive Chapter 1 funds are those that are located in districts whose average poverty is low. While these low poverty schools have poverty levels above their district's average, the incidence of children from low-income families is quite low with respect to other schools nationally.

### To what extent do low poverty schools in low poverty districts participate in Chapter 1 nationally?

Nationally, district poverty levels vary dramatically. An examination of the distribution of poverty levels in school districts in the United States (Kennedy, et al., 1986) shows that one-fourth of the nation's districts have poverty levels ranging from 0 to 7%; in the second quartile of districts poverty levels range from 8% to 12%; in the third quartile, from 13% to 20%; and in the fourth quartile from 21% to 100%.

It is estimated that about 90% of the nation's school districts receive some type of Chapter 1 funding (Anderson & Stonehill, 1986). One might expect that the wealthiest districts in the nation would be least likely to receive a Chapter 1 grant, but in fact it is very small districts with fewer than 1,000 students that are the least likely to receive Chapter 1 funds. Nearly 80% of the districts whose median family income is in the top 1% receive grants. In fact, districts whose poverty levels are under 10% (nearly 40% of the nation's school districts) receive 16% of the Chapter 1 funds or about $400 million annually (Anderson & Stonehill, 1986). The high participation rate in Chapter 1 of low poverty districts indicates that a significant number of schools with low concentrations of poverty may be participating in the Chapter 1 program.

## Do Low Poverty Schools in the 30-District Sample Qualify For Chapter 1 Funds?

In our sample, 621 schools have poverty levels above their district average, and thus are eligible to receive Chapter 1 funds. (Additional schools are eligible under the various options and they are examined in a later section.) Of this group, 28 schools (4.5%) have poverty levels at or below 12%, defined in this study as low to moderate poverty. Only seven (one-fourth) of these low to moderate poverty schools are actually receiving Chapter 1 funds, primarily because low poverty districts receive small allocations and are sometimes reluctant to spread them too thinly. The small number of such schools in our sample is due to the deliberate oversampling of high poverty districts. As we have shown, the participation of low poverty districts in Chapter 1 is significant at the national level, and we will use our sample to show how the participation of these districts can result in the participation of low poverty schools in the program.

To illustrate how low poverty schools can be eligible for Chapter 1 when low poverty districts participate in the program, we will contrast two districts in our case study sample. These two districts are of similar size (enrollments of about 23,000 students) and have similar numbers of school attendance areas. One very important difference between the districts is that the average poverty in one district is 3% compared to 20% in the other. We will simulate school targeting in these districts, using the district average percent poor and no targeting options, to determine which schools are eligible for Chapter 1 services.

The low poverty district (District C2) contains 23 elementary schools ranging from 0% to 12.2% poor; five middle schools ranging from 1.2% to 4.8% poor; and three high schools ranging from 0.5% to 3.2% poor. Of this group, 10 elementary schools, three middle schools, and one high school have poverty levels above the district's average.

The high poverty district, (District S3) has 22 elementary schools with poverty levels ranging from 10% to 34%; five middle schools with poverty levels ranging from 19% to 25%; and six high schools ranging from 12% to 28%. Of this group, 14 elementary schools, four middle schools, and one high school have poverty levels above the district average. Table 6 contrasts the poverty distribution of the Chapter 1 eligible schools in the low and the high poverty districts.

Table 6

Number of Chapter 1-Eligible Schools In a Low and a High Poverty District in the Sample by School Poverty Range

| Type of District | School Poverty Ranges<br>0-7% | <br>8-12% | <br>13-20% | <br>21-50% |
|---|---|---|---|---|
| Low poverty (3%) district (C2) | 12 | 2 | | |
| High poverty (20%) district (S3) | | | 6 | 13 |

In the low poverty district, schools with poverty concentrations of 2.8%, 3.1%, and 3.2%, for example, are eligible for Chapter 1 because they have poverty levels above their district's average. If these same schools were in a high poverty district, they would be well below the district's poverty average. In fact, in our example, there is no overlap in the poverty levels of the Chapter 1-eligible schools in the two districts.

School selection procedures for Chapter 1 create a situation in which a low-poverty district participating in the program can qualify low-poverty schools for Chapter 1 as long as they are slightly above the district's poverty average. Thus, in a district with 2% low-income students, a school with 3% low-income students can become a Chapter 1 school. Certainly a low-poverty district can have one or more attendance areas with much higher concentrations of poverty. In such a case, schools serving those attendance areas would also qualify for Chapter 1 services. In a more homogeneous low-poverty district, however, where no such high-poverty attendance areas exist, only low-poverty schools will qualify for Chapter 1 by virtue of being above the district's (low) average poverty.

In our sample, 21 schools with poverty under 8% and seven schools with poverty under 13% could participate in Chapter 1 because they are above their district's poverty average. All of these low-to-moderate poverty schools are, as one might expect, in districts with average poverty levels under 13%. It is a mathematical necessity that low poverty districts have a preponderance of low poverty schools. Conversely, few low poverty schools will be found in high poverty districts, and those that are will rarely be eligible for Chapter 1 services under any current targeting option. (Table A-6.in Appendix A shows for our sample the poverty distributions of Chapter 1-eligible schools and the districts in which they are located.)

The preceding discussion has shown how the participation of low poverty districts in Chapter 1 can contribute to the funding of low poverty schools by Chapter 1. In the the sections that follow, the impact of various school selection options is examined to determine the degree to which they contribute to the presence of low poverty schools in Chapter 1 in our sample. These analyses show that the use of school selection options accounts for only a small proportion of the low poverty Chapter 1 schools in our sample, although these school selection options increase the number of schools eligible to participate beyond those with poverty levels above the district average. It is the participation of low poverty districts in the program, however, rather than the school selection options used by those districts that appears to be responsible for most of the incidence of low-poverty Chapter 1 schools in our sample.

## To What Extent do Targeting Options Contribute to the Presence of Low Poverty Schools in Chapter 1 in Our Sample?

The presence of low poverty, higher achievement schools in the Chapter 1 program nationwide has led some observers to ask whether the school targeting options intended to add flexibility to the program have made it too easy for districts to include low poverty schools in their programs. Are districts using these options to skip needier schools and serve schools with less need? Are districts using the options to include schools which are below the district's poverty average and which are not the types of schools envisioned by policy makers as appropriate targets for Chapter 1 services? Our sample shows that most school selection options are not open to this type of misuse. All the districts in our sample are providing Chapter 1 services to their high poverty schools first, when such schools exist in their districts. A few are using the formerly eligible option to phase out slowly Chapter 1 services in a school which has undergone a change in its poverty level; however, in our sample these schools are not, with one exception, substantially different from other schools being served in the same district. The option most open to some misuse seems to be the uniformly high concentration of poverty option. Despite the word "high" in the name of the option, it could be used to serve all schools in a very low poverty district that has a narrow range in school poverty. We found no examples of this misuse in our sample, however.

In the following section, we discuss each school targeting option or exception districts can use in determining which schools will receive Chapter 1 services. For each option, we discuss the districts in our sample that use the option and the schools qualified as a result. Table 7 shows the number of districts in our sample that elected to use each option.

## The Formerly Eligible Option

The formerly eligible option is used by eight districts in the sample. The most frequent reason given by the districts for using this option is that they want to minimize disruption in staffing and programming and to ensure that schools do not "bounce" in and out of the Chapter 1 program from year to year. This option can be used to skip eligible schools; however, all but one of the districts in our study have chosen to use it to add schools over and above those already qualified. Table 8 indicates the number and percent of schools formerly eligible for Chapter 1 that continue to be targeted by the districts in our sample.

Table 7

Sample Districts' Use of Chapter 1 School Selection Options

| Options to Determine School Eligibility | Sample Districts Exercising Option: Number | % |
|---|---|---|
| Formerly eligible schools | 8 | 27 |
| Uniformly high concentration of poverty | 5** | 17 |
| 25% rule | 8 | 27 |
| LEA less than 1,000 students | 3 | 10 |
| Districtwide Average | | |
| Percent method | 13 | 43 |
| Number method | 2 | 7 |
| Combination method | 0 | 0 |
| Educational deprivation | 0 | 0 |
| Enrollment option | 7* | 23 |
| Comparable services | 0 | 0 |

*See text for a discussion of how this option is being used.

**One LEA used the districtwide average and then the uniformly high concentration of poverty option to qualify schools below the districtwide average.

Table 8

Number and Percent of Schools That Were Qualified as Formerly Eligible for Each District Using the Option

| District Code | Number of Schools in Chapter 1 | Schools Qualified as Formerly Eligible: Number | % |
|---|---|---|---|
| D2 | 145 | 14 | 10 |
| D1 | 90 | 7 | 8 |
| P2 | 55 | 3 | 5 |
| S2 | 20 | 2 | 10 |
| S3 | 15 | 1 | 7 |
| E1 | 8 | 1 | 13 |
| S6 | 3 | 1 | 33 |
| S4 | 2 | 2 | 100 |
| Totals: | 338 | 31 | 11 |

What kinds of districts in our sample use the formerly eligible option? Districts in our sample that use the formerly eligible option range from one with an average of 1% poor students to one with an average of 53%. Schools in these districts range from 0% poor to 100% poor, and within one district (S2) schools range from 14% to 100% poor. In another district using this option, schools have a much smaller range, from 0% to 4% poor. Thus, within our sample of 30 districts we can see that a variety of types of districts use the formerly eligible option. Districts for which this option has no utility are those qualifying all schools within a targeted grade band using the 25% rule, uniformly high concentration of poverty option, or LEA less than 1,000 students option.

What kinds of schools in our sample are qualified using the formerly eligible option? An important point to keep in mind about the formerly eligible option is that almost any school qualified using this option was qualified without the option within the past two years. The option can never be used to qualify a school which has not had a relatively (for its district) high number or proportion of low-income students, unless the school is in a homogeneous district which has used the uniformly high concentration of poverty option. In districts that experience dramatic shifts in school attendance, such as a district initiating a desegregation plan, the number or percent of low-income students enrolled in a school can change sharply. District S2 illustrates this in our sample.

Three years ago, District S2 began desegregating using a magnet school plan. This large, urban district has an average of 53% low-income students across all its schools. In 1984-85 it used the formerly eligible option to qualify two of its magnet schools. One of these schools, at 53.7% low-income, was barely under the district cutoff for number of poor enrollees. The other, at 14.4% low-income, is the least poor school in the district, with 13 other unqualified elementary schools not served by Chapter 1 having more and higher percentages of poor students. It is important to add that in this district schools qualified under the formerly eligible option receive reduced funding and are operating reduced, transitional Chapter 1 programs rather than the full programs operating at the other Chapter 1 schools.

The formerly eligible school in S2, at 14% low-income, is currently the least poor school in that district. In other districts in our sample with lower poverty, however, a school at this poverty level could easily qualify for Chapter 1 funding. In our sample, other schools qualified under the formerly eligible option include one with 1.3% low-income students. This junior high school is in District S4, the only district in our sample that skips eligible schools using the formerly eligible option. If the district average were used, the two schools that qualify as formerly eligible would still be eligible; however, the district would also have to offer services to four additional schools with higher poverty. Instead, the district reduces the number of schools it serves and maintains stability by using the option. Because of its narrow range of poverty, schools in this district can easily change rankings from one year to the next, making it difficult to maintain stability while concentrating services within a few schools, as this district chooses to do.

In our sample, the schools qualified under the formerly eligible option range in poverty from 1.3% to 53.7%. In six of the eight districts using the option, the schools qualified as formerly eligible are within a few points of the district cutoff, meaning that these same schools could easily be above the cutoff again in succeeding years. In District S2, already discussed, one formerly eligible school is a magnet school that has undergone a dramatic change in enrollment and is phasing out its Chapter 1 program. In another district (S6), the district has three schools and wants to serve all of them but as shown in Table 9, their poverty distribution is such that if they use the number method schools 1 and 2 qualify and if they use the percentage method schools 2 and 3 qualify. Consequently, for the past few years, the district has alternated each year between using the average number poor and percent poor as a cutoff. The formerly eligible clause is then used to qualify whichever school is below the cutoff that year.

Table 9

Number and Percent of Low-Income Children in Each School in District S6

| School | Enrollment | Low-Income Children N | Low-Income Children Percent |
|---|---|---|---|
| 1 | 721 | 86 | 12 |
| 2 | 443 | 95 | 21 |
| 3 | 252 | 63 | 25 |
| | Average: | 81 | 19 |

In our sample of eight districts using this option, it is clear that most districts use the option to maintain stability and to qualify additional schools for service. One district in the sample uses the option to serve schools out of order. However, since a school can qualify under the option for only two years, the district will have to develop a new selection plan in the near future. Based on our sample, this option seems to be a useful one that leaves little room for misuse.

## The Uniformly High Concentration of Poverty Option

The uniformly high concentration of poverty option (UHC option) is useful to districts where schools are homogeneous in terms of their percentages of poor students. This option is most useful to districts having small numbers of schools, since larger districts rarely achieve the necessary narrow range of poverty levels. Large, high poverty districts have the option of using the 25% rule to qualify most or all their schools. On the other hand, a district of any size whose most poor school has less than 10% poverty can always invoke the UHC option, thus increasing the number of low poverty schools eligible for the program. For example, District S4, a large suburban district in our sample, is eligible to use the UHC option. S4 has 19 elementary schools ranging in poverty from 0.3% to 4.1%, three middle schools ranging from 0.4% to 1.3%, and four high schools ranging from 0.4% to 1.5% poor. Because its poorest school has 4.1% poverty, the difference between the highest and lowest poverty school is less than 10%. (This district does not invoke the UHC option because use of the option requires that all schools qualified under the option be served. Low poverty districts receive relatively small Chapter 1 allocations and some are for that reason less likely to spread the allocation among all the eligible schools.) Table 10 shows the districts in our sample using the UHC option and the number of schools they added. The types of districts in our sample that use the option and the kinds of schools that are qualified for Chapter 1 under the option are discussed below.

Table 10

Schools Added to Chapter 1 by District's Using the Uniformly High Concentration of Poverty Option

| District Code | Schools Currently Targeted Using Option # | % | Schools Possible Without Option # | % | Schools Added by Option # | % |
|---|---|---|---|---|---|---|
| B1 | 9 | 60 | 7 | 47 | 2 | 28 |
| H1 | 6 | 100 | 3 | 50 | 3 | 100 |
| S5 | 5 | 83 | 4 | 67 | 1 | 25 |
| M2 | 2 | 67 | 1 | 33 | 1 | 100 |
| B2 | 4 | 80 | 2 | 40 | 2 | 100 |
| Totals: | 26 | 67% | 17 | 48% | 9 | 53 |

What kinds of districts in our sample use the uniformly high concentration of poverty option? In our sample, this option could be used by six districts and is currently used by five, only one of which is urban. This medium-sized urban district uses a unique variation of the UHC option to qualify schools within grade bands. The difference in poverty levels between the highest and lowest ranked primary schools in this district is 18%. However, the district follows a two-step school selection scheme that was suggested by their SEA. First, the district determines those primary schools that are eligible for Chapter 1 using the average percent of poverty for primary schools. To qualify the remaining schools (whose poverty falls below the average for the grade span) it determines the poverty range for those schools only and then invokes the UHC option. In fact, this medium-sized urban district is too large and heterogeneous to qualify to use the option in the more standard way.

The other four districts in our sample using this option are medium-sized and small suburban and rural districts, and it seems clear that the option is such that its utility will usually be limited to this type of district, or to districts with very low poverty (such as district S4 discussed earlier). Very small districts with fewer than 1,000 students in the LEA or with only one school at a grade band have no need for this option since such districts can qualify all their schools using other rules.

The average poverty levels of the five districts in our sample using this option range from 19% to 40%. Therefore, the option logically can be most useful to a district with very low poverty, in which the poverty is evenly distributed across its schools. In our sample the low poverty districts that could have used this option to qualify all its schools did not elect to use it.

What kinds of schools in our sample are qualified using this option? In the five sample districts using this option, three districts could have qualified the same schools by using the 25% rule or by using a district poverty average instead of a grade span average, or both. However, in all five districts using this option the SEA instructed or advised them to use the UHC option and they did so, apparently with no awareness of or interest in other possibilities. The other two districts, for which this option had utility, qualified schools at 10%, 16%, 17%, and 23% poor. Thus, although these schools are not particularly high in poverty, neither could they be described as very low.

Also of interest is the fact that five of the nine schools qualified under the UHC option could have been qualified without the option. Thus, this option appears to be less useful than other options, and more open to misuse by districts with all schools under 10% poverty, which could qualify all their schools if they wished to do so.

## The 25% Rule

The 25% rule has the least potential for misuse of any of the options, since it only has utility in cases where the district average poverty level is above 25% (fewer than a quarter of the nation's school districts, according to Kennedy, et al., 1986). In these districts, use of this option can qualify those schools whose poverty levels are between 25% and the district average. In our sample, 14 districts could have used the 25% rule to qualify additional schools but only eight districts chose to do so. The districts that elected not to use the option are those which prefer to concentrate services on the most needy schools rather than spread them by qualifying a larger number of schools. (The effects of a decision to concentrate services in a high poverty district will be discussed later in this chapter.)

Because it is most often used by urban, high poverty districts, the 25% rule is responsible in our sample for adding 150 schools to Chapter 1. The districts using the option were able to increase the number of schools they serve by 57% overall (see Table 11). This is obviously an important option and one that appears to have little potential for misuse if an accurate poverty indicator is used. However, some consideration might be given to whether 25% poverty is the appropriate limit for this option, or whether a lower level would permit the inclusion of more high poverty schools needing services. This possibility is discussed in more detail later in this chapter.

Table 11

Schools in Our Sample Added to Chapter 1 by Use of the 25% Rule

| District Code | Schools Currently Targeted Using Option # | % | Schools Possible Without Option # | % | Schools Added by Option # | % |
|---|---|---|---|---|---|---|
| S1 | 101 | 100 | 64 | 63 | 37 | 58 |
| D1* | 83 | 83 | 50 | 34 | 33 | 66 |
| C1 | 105 | 86 | 54 | 44 | 51 | 94 |
| P2* | 47 | 53 | 44 | 49 | 3 | 7 |
| O1 | 52 | 60 | 36 | 41 | 16 | 44 |
| M1 | 11 | 100 | 7 | 64 | 4 | 57 |
| C4 | 11 | 92 | 7 | 58 | 4 | 57 |
| O2 | 5 | 100 | 3 | 60 | 2 | 66 |
| Totals: | 415 | 79% | 265 | 46% | 150 | 57% |

*These LEAs used the formerly eligible option to qualify still more schools.

## Other Options and Exceptions

LEAs with fewer than 1,000 students. Districts having student populations under 1,000 may elect to serve all their schools at the desired grade levels without rank ordering them. Of the four districts within our sample eligible to use this option, three elected to use it. Two of these districts are suburban, with poverty levels of 8% and 6%. These districts have only one school per grade band, so their use of this option does not change the schools they would serve. The third district, a rural district, has 25% low-income students and again only one school per grade band.

A fourth rural district with a poverty level of 78% chooses not to use this option. It serves its three largest schools, with poverty levels ranging from 66% to 89%, with Chapter 1 funds. Two very small, remote schools with poverty levels of 0% and 33% are not served, in one case because services, although legal, are believed to be inappropriate and in the other case because the school is so small and remote. In this particular district, use of the option could result in the qualification of a school having no poor children at all in attendance. Thus, low-poverty schools are eligible for Chapter 1 under this option if they are in small school districts.

Ordering schools by number versus percent poor. In rank ordering schools by poverty, districts may consider either the number or percent of low-income children in the school attendance area. Use of the number method tends to favor schools with larger enrollments (e.g., high schools over smaller elementary schools). Of the 15 districts in our sample using a districtwide poverty average to determine school eligibility, one district uses the number method because in this way it increases the pool of students from which Chapter 1 participants can be selected. The schools it qualifies using the number method range from 49% to 100% poor. Another district uses the number method in alternate years to increase the number of schools it can serve (as described in the discussion of the formerly eligible option). These schools range from 12% to 25% poor. The other 13 districts rank order schools by the percent of low-income children. None of the districts in our sample exercise the option of combining these two methods. Districts also have the choice of using average poverty within or across grade bands. The effects of this decision are discussed later in this chapter.

Educational deprivation. Districts may skip a school attendance area with higher poverty in order to qualify a school with greater educational deprivation. None of our districts uses this option, although two districts reported that they compare rankings by poverty and by educational deprivation every year and that they would use this option if a less poor school showed more educational deprivation. Given the strong negative correlation between school poverty and achievement, it seems unlikely that this option is open to misuse.

Enrollment option. Districts also have the option of using enrollment data rather than residence in school attendance area data to qualify schools not located in eligible school attendance areas. This option can useful to (a) districts in which many higher-income children in a school attendance area attend private schools, and (b) for districts undergoing desegregation. Seven districts in our sample are using enrollment data rather than school attendance area data. In all but one case, however, the districts are using the option for all their schools rather than for schools not in eligible attendance areas.

One such district has no private schools within the district, and uses enrollment data for all its schools. At the grade levels served in this district, enrollment and school attendance area data should be very similar because of the lack of private schools. Use of enrollment data in this district should not have any effect on school selection. Another district uses enrollment data for all its high schools, and four additional districts use enrollment data for all their schools. These districts are operating under desegregation plans and most have magnet schools. Under these conditions, the concept of school attendance areas loses its meaning since the school a student attends is unrelated to the neighborhood in which he or she lives. These districts are using school enrollment as the only logical method of school selection under the circumstances existing in their districts.

Comparable services. Districts have the option of skipping schools that receive services comparable to those offered by Chapter 1, such as services of a state compensatory education program. No district in our sample exercises this option.

### Summary

An examination of the use of school selection options in our sample shows that these options, for the most part, are not open to misuse by districts in a way that would result in skipping higher poverty schools to qualify lower-poverty schools. Options which could be open to possible misuse are the UHC option and LEA less than 1,000 option. For most years in most districts, the Chapter 1 legal framework results in districts qualifying the highest poverty schools. In low-poverty districts, however, the highest poverty schools may often have very low poverty with respect to other schools in the nation.

### Why are some high poverty elementary schools not receiving Chapter 1 funds?

In the 30 district sample, 63 of the 812 elementary schools with poverty levels over 20% did not receive Chapter 1 funds. (These schools were not skipped as schools receiving services of comparable nature and scope.) The schools are in eight districts, all with poverty over 20% and one with poverty over 50%. As we will show, high poverty non-Chapter 1 elementary schools exist in high poverty districts where (a) the schools' poverty level is below the district average and also below 25% or (b) the district has a policy of concentrating services on its most needy schools. In addition, we will show that serving schools at all grade bands can result in the exclusion of high poverty elementary schools from the program. As we discuss in the following section, the national emphasis on funding elementary schools rather than junior and senior high schools can but does not necessarily result in the further omission of high poverty schools from the program.

Since Chapter 1 is intended to benefit students in high poverty schools, and since many schools with relatively low poverty nationally also benefit from the program, one would not expect the program's legal framework to be responsible for the exclusion of high poverty schools. In our sample, however, 16 of the 63 high poverty elementary schools (according to a definition of high poverty as above 20% poor) cannot be served because they are below their district's average poverty and they are also below 25% poverty (so they cannot qualify under the 25% rule). These schools are all in districts that qualify as many elementary schools as possible. Thus, it is safe to assume that the districts would have included these 16 schools had it been legal to do so.

Forty-six of the high poverty elementary schools which are not Chapter 1 schools are in three districts that have policies of concentrating services. These districts do not serve as many schools as possible; they do not use the 25% rule and in some cases do not serve all the elementary schools which are above the district average in poverty. The districts give two reasons for concentrating services in this way.

The first reason these high poverty districts do not qualify every eligible school is that their allocations are not large enough to spread over all the schools that could qualify and still maintain desired levels of Chapter 1 services. These districts choose to have substantial Chapter 1 programs in their most needy schools rather than having smaller programs and including (relatively) less needy schools. Of course, while these schools are less needy by their individual district's standards, at the national level they have relatively high poverty levels, even within the Chapter 1 program.

The second reason these high poverty districts do not serve all the schools that could qualify is that it is politically unwise for them to establish a Chapter 1 program in a school unless they are confident that they can keep the program there. Thus, some districts avoid qualifying schools that are barely above the district cutoff, because these schools could easily be below the cutoff over several succeeding years. Other districts are apprehensive of cuts in Chapter 1 allocations. Therefore, even if they could currently afford to qualify more schools than they do, they believe that in future years they might receive smaller allocations and would then be forced to withdraw funds from certain schools. These districts try to maintain political stability by concentrating services.

Other reasons are logistical in nature. For instance, one rural district does not serve a very small, remote elementary school with high poverty because of the difficulties involved in reaching the school combined with the small number of students who would be affected.

In general, it appears that a stable increase in allocations to districts above a certain poverty level (such as 20% or 25%) might have the effect of increasing the number of high poverty schools qualifying for Chapter 1. Also, schools with poverty levels that are substantial but that are below 25% could be increased, if policy makers found it desirable, by changing the 25% rule to the 20% rule or by using any lower limit deemed appropriate. Some districts, however, would presumably still choose to concentrate services on the most needy schools unless they were legally required to serve all schools above a certain poverty level.

### To what extent does grade band targeting deprive high poverty schools at upper grade bands of Chapter 1 funds?

Under the Chapter 1 legislation, school districts are given the option of serving all grade bands or of selecting a subset of grade levels for Chapter 1 services. Table 12 provides a summary of the grade spans currently served among the 30 districts in our study. As can be seen from Table 12, all the 29 school districts with elementary schools include Chapter 1 services at this level. In contrast, of 21 districts that have separate middle or junior high schools, only 14 serve buildings at this grade band. Even fewer districts in our sample, 9 out of 29 or 31%, provide Chapter 1 to senior high schools or schools containing grades 7 to 12.

Table 12

Grade Spans Currently Served in Chapter 1 in 30-District Sample

| Grade Spans | Number of Districts With Grade Span | Districts Serving Grade Span | |
|---|---|---|---|
| | | Number | % |
| Elementary or Combined K-8 | 29 | 29 | 100 |
| Middle/Junior High | 21 | 14 | 67 |
| Senior High or Combined Junior/ Senior High | 29 | 9 | 31 |

Clearly, for the majority of districts in the sample, Chapter 1 services are concentrated at the elementary grades. This is consistent with reports that have looked at the distribution of Chapter 1 participants by grade level nationally (Anderson & Stonehill, 1986). Historically, 90% of all Title I/Chapter 1 students are in the elementary grades from pre-kindergarten to grade 8, although less than 70% of the school-aged population attends these grades. The preponderance of program students at the lower grades is a function of grade band decisions made by districts in which senior high schools and often junior high schools or middle schools are not considered at all in the school selection process.

The extensive use of grade band targeting in the Chapter 1 program leads to the question of the extent to which such district decisions contribute to the absence of high poverty schools from the program. If districts were required to qualify eligible schools at all grade bands, would Chapter 1 reach more high poverty, low achievement schools than it does under the current system? This is a complex question, in part because many districts believe Chapter 1 services are most effective at the elementary levels, regardless of considerations of poverty.

What makes the issue even more complicated, as we will show, is the fact that high schools on the average tend to have relatively lower proportions of students from low-income families than the elementary and middle schools in their districts. Furthermore, given that a district would keep the same number of program participants, the number of students served per school will vary according to the number of schools qualified, and the number of schools funded will vary according to the targeting options the district decides to use. The interaction of these factors makes it difficult to make generalizations about the effect of qualifying schools at all grade levels. What is clear, however, is that such a decision would not necessarily result in qualifying a more needy group of schools or in serving a substantially lower achieving group of students.

As shown in Table 13, in 21 of the 24 districts in our sample for which we have school level poverty data, poverty levels decrease as the school grade levels increase. Personnel in several districts mentioned that poverty rates based on participation in the National School Lunch Program tended to decrease at the high school level because students no longer wished to eat on campus and would not sign up for the program even though their families qualified. Thus it is necessary to consider the possibility that the decrease in poverty rates as measured by National School Lunch Program participation may be, at least in part, an artifact of the poverty measure.

Analyses of census data reported by Kennedy, et al., (1986), however, also show that nationally the poverty rate in junior and senior high schools is lower than it is among elementary-level students, indicating that the decrease in poverty across school levels is a real occurrence. It is believed this reflects either the rising income of maturing families or the fact that mothers are likely to remain at home while their children are young and return to work when they are older. Another factor that is believed to play a role is that poor students are more likely to drop out of school and thus not be included in poverty counts at the upper grades.

Assuming that the decrease in poverty across school levels is a real occurrence, it would appear that many of the students who are the potential recipients of Chapter 1 services are no longer in the education system at the upper grades. The fact that many districts choose not to serve senior high schools does not necessarily mean that the neediest schools are not being qualified for services.

Would more needy students receive Chapter 1 services if all grade bands were targeted? Annual national achievement data on Chapter 1 students by grade level has consistently shown a pattern whereby the achievement status of students decreases as the grade band of the students increases. For 1983-84, the average reading score of students

## Table 13

## Percentage of Poverty by School Level for the 30-District Sample

| District Size and Type | District Code | Percent of Students From Low-Income Families Elem. Schools | Middle Schools | High School |
|---|---|---|---|---|
| **Very Large Urban** | C1 | 65.7 | 57.8 | 32.6 |
| | D1 | 45.9 | 29.1 | 15.1 |
| | D2 | 28.1 | 26.4 | 28.2 |
| | G1 | 13.9 | 14.1 | 13.5 |
| **Large Urban** | L1 | 42.9 | 33.3 | 19.9 |
| | L2 | 21.8 | 16.2 | 8.8 |
| | O1 | 36.2 | 42.8 | 22.4 |
| | P2 | 32.0 | 25.0 | 17.4 |
| | R1 | 39.3 | -- | 36.8 |
| | S1 | 65.6 | -- | 39.6 |
| | S2 | 57.5 | 46.8 | 37.3 |
| | S3 | 24.1 | 22.9 | 13.2 |
| **Large Suburban** | C2 | 3.1 | 2.6 | 1.6 |
| | S4 | 1.2 | 1.0 | 1.0 |
| **Medium Urban** | B1 | 25.6 | 18.3 | 11.8 |
| | M1 | 82.0 | 77.8 | 68.8 |
| **Medium Suburban** | E1 | 12.2 | 11.7 | 4.8 |
| | H1 | -- | 19.8 | 12.8 |
| **Medium Rural** | C4 | 45.3 | 42.4 | 32.3 |
| | C5 | 27.3 | 26.4 | 8.0 |
| | S5 | 27.1 | 22.7 | 24.5 |
| **Small Suburban** | M2 | 47.4 | -- | N/A |
| | S6 | 17.2 | -- | N/A |
| **Small Rural** | B2 | 30.9 | N/A | N/A |
| | H2 | 75.8 | -- | 68.0 |
| | O2 | 88.4 | -- | 83.3 |
| **Very Small Suburban** | J1 | 10.9 | -- | 5.4 |
| | P1 | N/A | | N/A |
| **Very Small Rural** | J2 | 78.9 | -- | N/A |
| | M3 | 29.3 | -- | -- |

N/A = Not available from documents.

in grades 2 through 7 was 35 NCEs; in grades 8 and 9 it was 34 NCEs; and for grades 10, 11, and 12 it decreased to 30 NCEs (Anderson & Stonehill, 1986). Chapter 1 students at the senior high school level appear to be lower achieving than those currently served at the elementary and junior high school levels.

These data raise a concern that the elimination of the high schools at the school selection stage has meant that educationally needier students in the upper grades are being excluded from the opportunity to participate in Chapter 1, and that the available places are instead being filled by less needy students at the elementary grades. If this were true, then targeting at all grade bands should result in a needier population being served. Data from our study do not allow us to examine directly the achievement levels of high school students because most districts in our sample and nationally do not conduct districtwide achievement testing after ninth or tenth grade. In this section and in Appendix E, however, we present a variety of data that together indicate that including more high school students in Chapter 1 can but will not necessarily produce a lower scoring total group of participants.

Many studies have examined the relationship between school mean family income levels and average school achievement scores. For instance, the Sustaining Effects Study (Breglio, et al., 1978) found a correlation of .67 between school mean family income and school mean achievement. We calculated the correlation between school mean reading achievement and proportion of low-income students for schools in each of the largest districts in our sample for which we had data. The school-level correlations for these 10 urban districts are shown in Table 14. The analysis shows that the correlations range from -.52 to -.74, with an overall average correlation of -.66. That is, within these districts, there is a strong negative correlation between school poverty and school achievement. This means that schools with higher proportions of low-income families, such as elementary schools, will tend to have lower mean achievement scores than schools with smaller proportions of low-income families, such as high schools.

Table 14

Correlation Between School Mean Reading Achievement and School Poverty

| District | Number of Schools | School Level Correlation |
|---|---|---|
| D1 | 95 | -.60 |
| C1 | 66 | -.69 |
| G1 | 57 | -.69 |
| L1 | 18 | -.74 |
| L2 | 32 | -.70 |
| O1 | 80 | -.69 |
| R1 | 41 | -.60 |
| S1 | 100 | -.52 |
| S2 | 34 | -.69 |
| S3 | 22 | -.66 |
|  | 545 | Overall average: -.66 |

Data from the High School and Beyond Study (NCES, 1984) about dropping out of high school are also relevant to the issue of Chapter 1 services for high school students. Data from the High School and Beyond Study show that almost 14% of 1980 high school sophomores left high school without a diploma at some point after the spring of their sophomore year. Higher dropout rates were associated with minority status, low socioeconomic status, and poor academic performance--characteristics that also typify Chapter 1 participants. The dropout rate among low achievers is very high. Nearly 42% of those students who indicated that they received classroom grades of mostly D's dropped out of high school after their sophomore year. These data suggest that educationally deprived students are present in the upper grades of high school in lower concentrations than at the elementary level.

How then can we explain the fact that nationwide Chapter 1 high school students have much lower achievement scores than Chapter 1 elementary students? We believe that this phenomenon occurs because the proportion of high school students who participate in Chapter 1 programs is smaller than the proportion of elementary school students participating in Chapter 1. Currently Chapter 1 elementary students are 14% of the nation's elementary school enrollment while Chapter 1 secondary students are only 4% of the nation's secondary school enrollment (Anderson & Stonehill, 1986). Because they are smaller, Chapter 1 programs at the high school level are concentrated on lower scoring or more educationally deprived students than are those at the elementary school level.

Using data from one of the largest districts in our sample, we simulated the effects of expanding Chapter 1 services to include high schools. This simulation is presented in detail in Appendix E. In the simulation, in order to include middle and high schools in the Chapter 1 program the district must change its school selection strategy. The district has three strategies from which it can choose to select schools at grades K-12. One strategy results in serving fewer elementary schools but more students within each school. In our simulation, this results in service to a higher achieving group of elementary students.

The simulation illustrates two things. First, if a district serves its neediest students within each school, then serving a larger group within a school will necessarily result in raising the mean achievement level within the group. This supports our belief that Chapter 1 secondary students are lower-scoring than elementary students because they represent a smaller proportion of their group. Second, the simulation shows that school selection in a large district can be a very complex process in which many factors interact. In our simulation, altering school selection procedures to include middle and high schools resulted in significant changes in the elementary schools and students served, changing the overall composition of the Chapter 1 program. The simulation shows the complexity of trying to predict the effects of a decision to include high schools in Chapter 1. It cannot be assumed that a decision to target Chapter 1 services only at lower grades results in serving a less needy group of students than if the program were targeted across all grades. The outcome of adding higher grade bands to Chapter 1 in any district will depend upon district conditions and upon the school and student selection decisions the district makes in implementing the change.

What reasons do districts give for serving only elementary grades? District personnel in the sample were asked how their district decided which grade levels to serve. The districts that restrict the grade levels served in Chapter 1 relative to the total grades in their districts reported a wide range of rationales for their decisions. Usually, more than one reason was reported. Table 15 presents the reasons given for concentrating services at lower grades, grouped under some of the contextual factors discussed in the previous chapter. Personnel in 13 districts commented that they have historically served elementary grades. Perspectives of decision makers, such as a belief that elementary grades show the most need, also play an important role in a district's decision to restrict Chapter 1 services to the elementary grades.

Of those districts in our sample that currently include grades 7, 8, or 9 in Chapter 1, two districts expect that those grades will be eliminated if further budget cuts occur. One district reported that it may have to eliminate grades 7 and 8 because the state does not want to fund Chapter 1 at these upper grades. Another district saw a lack of building support at grades 7 and 8 as a reason for excluding those grades from Chapter 1 in the future. In contrast, six districts currently serving all grade spans within their district did not mention any anticipated changes in the grade levels they will serve in the near future.

To illustrate the effect of targeting at all grade bands, we examined the number of additional schools that could be qualified in our sample if the district's targeting strategy were extended across all grade levels. (For instance, if a district uses the 25% rule to target

Table 15

Reasons for Selecting Elementary Grades for Chapter 1 in the 30-District Sample

| | Number of Districts[a] | |
|---|---|---|
| Perspectives of Decision Makers | | |
| Elementary grades show most need | 6 | |
| Input from parental or advisory council | 5 | |
| LEA belief in early intervention | 4 | |
| Greater support from building staff at elementary schools | 3 | |
| Studies show Chapter 1 more effective at elementary grades | 3 | |
| Total: | 21 | (70) |
| Established Procedures | | |
| Elementary grades historically served | 13 | |
| Scheduling conflicts for Chapter 1 at secondary levels | 3 | |
| Problem granting course credit for Chapter 1 at secondary levels | 1 | |
| Total: | 17 | (57) |
| Resources | | |
| Secondary schools eliminated due to funding cuts | 4 | |
| Secondary schools served with state or district funds | 4 | |
| Total: | 8 | (27) |
| State Guidelines | 4 | (13) |

[a] Districts may give more than one response. Numbers in parentheses indicate the percent of districts giving a response in this category.

all elementary schools, this rule was applied to middle and high schools. If a district uses grade band averaging at the elementary and middle school levels, this method was applied at the high school level.) Table 16 shows the number of schools districts currently serve compared to the number that could be served if secondary schools were considered. As one might expect, the number of schools served would increase. In our sample, the inclusion of secondary schools represents a 20% increase over present numbers. However, as readers of Appendix E have learned, neither the schools served nor the students served would necessarily be needier if these secondary schools were included in the Chapter 1 program.

Table 16

Public Schools Currently Served Versus Public Schools Eligible if Secondary Schools Were Included

| District Code | Public Schools Currently in Chapter 1 |  | Public Schools Eligible Including Secondary Schools |  | Increase in Schools |  |
|---|---|---|---|---|---|---|
|  | # | % | # | % | # | % |
| C1 | 105 | 86 | 118 | 97 | 13 | 11 |
| D1 | 90 | 62 | 112 | 77 | 22 | 24 |
| L1 | 15 | 52 | 20 | 69 | 5 | 33 |
| L2 | 10 | 22 | 17 | 37 | 7 | 70 |
| O1 | 52 | 60 | 56 | 64 | 4 | 7 |
| S1 | 102 | 87 | 115 | 98 | 13 | 13 |
| S2 | 20 | 42 | 26 | 54 | 6 | 30 |
| S3 | 15 | 45 | 20 | 61 | 5 | 33 |
| C2 | 5 | 16 | 6 | 19 | 1 | 26 |
| S4 | 2 | 8 | 3 | 12 | 1 | 50 |
| B1 | 9 | 60 | 11 | 73 | 2 | 22 |
| E1 | 8 | 47 | 9 | 53 | 1 | 12 |
| C4 | 11 | 92 | 12 | 100 | 1 | 9 |
| C5 | 4 | 67 | 6 | 100 | 2 | 50 |
| S5 | 5 | 83 | 6 | 100 | 1 | 20 |
| M2 | 2 | 67 | 3 | 100 | 1 | 50 |
| S6 | 3 | 75 | 4 | 100 | 1 | 33 |
| B2 | 4 | 80 | 5 | 100 | 1 | 25 |
| J1 | 3 | 50 | 6 | 100 | 3 | 100 |
| P1 | 1 | 50 | 2 | 100 | 1 | 100 |
| Totals: | 466 |  | 557 |  | 91 | 20% |

## Summary

High poverty elementary schools (defined as schools having more than 20% low-income students) are sometimes excluded from Chapter 1. In some cases their poverty level, although high, is below their district's average or below 25%. In other cases, these schools could qualify as Chapter 1 schools but their districts elect not to fund them, either because of a policy of concentrating services on the neediest schools in the district or because of a policy of not serving schools which may later lose funding. Many districts achieve stability by keeping Chapter 1 in the same schools year after year, and they are reluctant to fund schools which may be ineligible in future years or schools for which they may not always have sufficient funds. It appears that a stable increase in Chapter 1 allocations to high poverty districts, perhaps coupled with a lowering of the 25% limit in the current 25% rule, would result in more high poverty schools being included in the program.

The traditional focus of Chapter 1 on the elementary grades has not necessarily resulted in the exclusion of high poverty middle and high schools from the program, since schools at upper levels tend to be less poor than elementary schools. Depending upon the targeting options a district chooses to use, expanding the Chapter 1 program to the upper grades can sometimes result in the exclusion of elementary schools that are higher in poverty than the high schools receiving funds. Based on the simulations performed in this study and on national data on the difference in poverty incidence at elementary and secondary schools, we can see that a legislative mandate to serve at all grade levels would probably not have the effect of increasing the number of high poverty schools included in the program.

## What Effect Does Ranking and Averaging Within Grade Bands Have on the Schools Receiving Chapter 1 Funds?

### Introduction

School districts that elect to use district averaging to select schools for Chapter 1 have the option of averaging poverty levels within grade spans to be served and ignoring grade spans that are not targeted for services. Some districts use this option to select schools by averaging within grade bands even if they will ultimately include all grade levels in their Chapter 1 program. Other districts average across grade spans but do not serve every grade span. As readers of Appendix E can see, the choice of poverty average to use has an effect on the numbers and kinds of schools that qualify for Chapter 1. To investigate this further, we simulated both averaging methods in 12 districts for which we had the necessary data. In most cases, it appears that using grade span rather than district averages will (a) decrease the number of elementary schools qualifying for Chapter 1, (b) have little effect on qualifying middle or junior high schools, and (c) increase the number of high schools qualifying.

### What changes might occur if districts in our sample change from districtwide averaging to grade span averaging?

As we have seen in Table 13, for most districts in our sample the average percent of low-income students in elementary schools is higher than the same figure at the middle school level, which itself is higher than average poverty at the high school level. Thus, the average student poverty at the elementary level is usually higher than the average for the entire student population of the district. When a district uses the grade span average to qualify elementary schools, fewer elementary schools will qualify than if a district average were used. At the high school level, the reverse is true. There the grade span average tends to be lower than the district average, so use of a grade span average will qualify more high schools. Table 17 shows for 12 districts the effect of changing from a district average to averaging within grade span. In our sample such a change would result in 37 fewer elementary schools qualifying (16% less), two fewer middle schools qualifying (3% less), and nine more high schools qualifying (29% more). If the districts change in the opposite direction (i.e., from using grade span averages to using district averages) the effect is reversed.

Table 17

Number of Schools Qualifying for Chapter 1 in 12 Districts, by Averaging Method

| School Type | Average Across District | Average Within Grade Span | Change |
|---|---|---|---|
| Elementary | 237 | 200 | - 37 |
| Middle/Junior | 64 | 62 | - 2 |
| Senior High | 31 | 40 | + 9 |

The difference in qualifying schools caused by the two averaging methods comes from the difference in poverty among grade spans. For the two districts using census tract data, which tends to minimize grade span differences, the effect of changing from district to grade span averages is small and actually results in fewer rather than more high schools being served. For every district in which average poverty levels decrease as grade levels increase, however, the choice of which type of average to use will also be a choice of how many schools in each grade span will qualify for Chapter 1 funding.

To maximize the number of elementary schools qualifying, districts should use a districtwide poverty average. (This is true even if only elementary schools will be funded.) To minimize the number of elementary schools qualifying and/or maximize the number of high schools qualifying, districts should use grade span averages. For middle or junior high schools the effect of using either average will usually be small and will vary from district to district.

## Summary

The option to calculate average poverty levels within as well as across grade spans allows districts some flexibility in targeting at the elementary and high school levels. Some districts in our sample use a variety of options to qualify elementary schools below the grade span average poverty when use of a district average would qualify the same schools without the use of any options. Other districts, however, serve only their highest poverty schools regardless of the poverty cutoff they use so that for them changing the type of average would make no difference in the schools that ultimately receive funds. The option to choose one average or another seems to be a useful one, but with ramifications that not all districts are aware of. In most cases, districts decrease elementary schools qualifying and increase high schools by using grade span rather than district averages.

## Choice of Poverty Indicator

Since Chapter 1 legislation does not specify the type of data districts should use in ranking schools by poverty, it seems appropriate to consider what effect the choice of poverty indicator has on the qualification of schools for Chapter 1. Although our data did not permit any direct comparisons of poverty indicators, we found no evidence that the choice of a particular indicator would cause inequities within a district. Indicators will produce different results, however, when applied to a specific poverty level, such as in the case of the 25% rule.

### What poverty indicators are typically used?

The District Practices Study (Advanced Technology, 1983) found that 77% of districts used free or reduced price lunch counts, 36% used Aid to Families With Dependent Children (AFDC) enrollment, and 19% used census data on family income (some districts combine more than one measure). Preliminary data from OERI show comparable patterns of current use and as Table 18 shows, the districts in our sample made similar choices. Seventy percent use either free or free and reduced lunch counts, 13% combine lunch counts with AFDC data, and 10% use AFDC data alone. Seven percent use census data, either alone or in combination with AFDC data.

Table 18

Sample Districts' Use of Poverty Indicators

| Poverty Indicators | Number of Districts Using Indicator | Percent of Districts Using Indicator |
|---|---|---|
| National School Lunch Program | | |
| Free and reduced lunch | 17 | 57 |
| Free lunch | 4 | 13 |
| Aid to Families With Dependent Children (AFDC) | 3 | 10 |
| Combination of free/reduced lunch and AFDC | 4 | 13 |
| Census data on family income | 1 | 3 |
| Combination of census and AFDC | 1 | 3 |
| Overall: | 30 | 99 |

## Does the choice of poverty indicator make a difference in school targeting?

Districts in our sample using combined measures believe that one or the other indicator alone would underestimate poverty. In one such district, administrators believe that free and reduced lunch counts underestimate poverty at the high school level because students are embarrassed to apply for the lunch program. This district believes that combining the count with AFDC data produces a more accurate count. Another district, which also combines lunch program and AFDC data, believes that many families who are too proud to use AFDC will apply for free or reduced lunches for their children. For the most part, districts appear to select the measure they use for administrative reasons and because they believe it is accurate, not because a particular measure is believed to produce a higher count.

In our sample we were not able to compare directly the effects on school selection of using different poverty measures. In Table A-11 in Appendix A, two poverty estimates for each district in the sample are presented. One figure represents the figure derived from the data source the district used to select schools, usually free and reduced lunch data. The second figure represents poverty estimates based on Orshansky Index data from 1980. It appears that use of free and reduced lunch data will generally produce a higher count than use of other types of data. This becomes important only when the legislation specifies certain poverty levels, such as in the 25% rule. If more such specific provisions were contemplated, it might be wise to consider specifying the poverty measure to be used in making the count.

### What reasons do districts give for their choice of poverty measure?

In our interviews with district Chapter 1 staff, the most frequent reasons given for using the free and reduced lunch counts are that this information (a) is believed to be the most accurate, (b) is readily available to the school districts, or (c) in many cases its use is recommended or required by their SEA.

Of those using a composite of free/reduced lunch and AFDC, two districts mentioned earlier specifically said that using one indicator alone would result in an underestimate of poverty in their districts. One of the districts that uses AFDC to measure poverty described their method of obtaining counts for their school attendance areas (SAAs). A list of the families on AFDC is obtained from a county government office. The list contains names and addresses of families and the ages of the children. It does not indicate the schools that children attend. Each year the bus transportation staff, who are familiar with school area boundaries, are asked to determine which families with school-age children live in each SAA. The difficulties involved in using this method explain why free or reduced lunch counts are a more popular measure.

The one district using census data alone does so because there is a belief both at the district and the state level that using 1980 census data would be "auditable." The district also related that one of the reasons they use census data is the burden involved in maintaining records on individual students if free and reduced price lunch were used.

The district that combines census data with AFDC weights the census data more heavily because it is stable over 10 years and thus provides a long period of stability in school rankings. Use of census data also has the effect of minimizing differences in poverty between grade bands (see districts D2 and G1 in Table 13). This is because each student's poverty ranking is a function of the student's census tract rather than of the student's family income.

### Summary

A district's choice of poverty indicator is related to administrative concerns as well as to belief in the accuracy of the indicator. Poverty indicators differ with reference to an absolute poverty level, because free and reduced lunch data will usually produce a higher count than other data. Thus if the legislation were modified to include an increased number of poverty limits, policy makers might wish to consider specifying a specific poverty indicator to be used.

## Chapter Summary

### Chapter 1 School Selection and Poverty

One of the most important findings of this chapter is that while the selection of schools to receive Chapter 1 funds appears to be working successfully within individual districts in our sample, where the neediest schools are usually selected, across districts the legal framework can result in the inclusion of relatively low poverty schools and the exclusion of relatively high poverty schools. The district school targeting process results in apparent inequities nationally, where some high poverty schools in high poverty districts are not Chapter 1 schools while low poverty schools in low poverty districts are able to receive program funds. Although Chapter 1 allocations to low poverty districts are relatively small, they add up to about $400 million annually. Our sample of 30 districts reveals the sources of the unevenness in the distribution of Chapter 1 funds to schools nationwide:

- Low poverty Chapter 1 schools are often a direct result of the participation in the program of low poverty districts. Districts may receive Chapter 1 allocations if they are located in a county in which at least 10 low-income children live.
- High poverty non-Chapter 1 elementary schools result from:
  (a) schools being below their district's poverty average and having slightly fewer than 25% low-income students;
  (b) schools being in high poverty districts which for reasons of stability or educational philosophy serve only their very neediest schools.

Strategies to consider in reducing these apparent discrepancies include:

- A school-level rather than a county-level poverty limit. For instance, Chapter 1 funds could be removed from low-poverty districts having no high-poverty schools.

- A stable increase in Chapter 1 allocations to high poverty districts; for example, districts with over 21% of their students from low-income families. This would encourage some high poverty districts to serve more eligible schools.

- A modification of the 25% rule to permit high poverty districts to qualify more schools. For example, schools with more than 20% low-income students could be eligible to participate even if they were below their district's poverty average.

## What is the Impact of Targeting Options and Exceptions?

The use and potential use of targeting options and exceptions were evaluated using our 30-district sample. Overall, we found that many districts have some flexibility in the schools they designate as Chapter 1 schools, although this flexibility is sometimes lost either because districts are unaware of targeting possibilities or because they must follow SEA directives. Data from our sample revealed the following:

- The 25% rule is the most powerful targeting option, because it is used most often in large urban districts. Use of this option added 150 high-poverty Chapter 1 schools to our sample (a 57% increase), despite the fact that three large districts did not choose to use the option.

- The formerly eligible option is widely used and added 31 schools at varying poverty levels to the districts in the sample that used it, increasing those districts' Chapter 1 schools by 11%. In all except one case the schools added were very close to the district poverty average.

- The uniformly high concentration of poverty option is not widely used in our sample and in three of the five districts where it was used, its use was unnecessary since the same schools could have been qualified by another method. Preliminary OERI data, however, indicate that nationally as many as 40% of districts that select schools are using this option. The UHC option could be used by a district with all low-poverty schools to serve all its schools, since the poverty range in such a district would be less than 10%. The option appears to have the least utility and most potential for misuse of any of the targeting options and exceptions.

- Grade band averaging as opposed to district averaging is an option that is more powerful than some districts realize. Use of a grade band average will usually qualify fewer elementary schools than a district average, and more high schools. Many districts use the option of serving only elementary and middle schools, both in our sample and nationwide. Not all districts realize, however, that by using a district average to target elementary schools they can qualify more of those schools than by using a grade band average.

- The use of number versus percent poor can make a difference in school selection, since the use of number tends to favor schools with larger enrollments such as high schools. Most districts, nationally and in our sample, use the percent method.

- Most districts use National Lunch Program data as their poverty indicator, both nationally and in our sample. This measure is readily available, is widely believed to be accurate, and in some cases is required by SEAs. There appear to be some absolute differences among poverty indicators, because use of lunch program data appears to indicate a higher poverty level than use of other data, at least at the elementary level. Use of census data tends to smooth out differences between elementary and high schools.

- Several districts use school enrollment instead of residence in a school attendance area to rank all their schools. These districts, for the most part, are involved in desegregation plans which effectively abolish school attendance areas.

- The LEA with fewer than 1,000 students option was little used in our sample and is used nationally by about 6% of all Chapter 1 districts, according to preliminary OERI data. This appears to be a useful option for small districts having more than one school at a grade level.

- The educational deprivation and comparable services options were used by very few districts in the sample and seem unlikely to make much difference in the national distribution of Chapter 1 schools.

- Use of targeting options in a low to moderate poverty district can increase the number of low poverty schools receiving Chapter 1 funds. It can rarely have this effect in a high poverty district, however, because most schools in high poverty districts have a high incidence of poverty. Thus, modification or even elimination of specific targeting options would have a much smaller impact on the national program than would an alteration in the types of districts eligible for funds.

## Chapter 1's Elementary Emphasis

At the national level, Chapter 1 is overwhelmingly an elementary program, meaning that most high schools are not receiving Chapter 1 funds. Are these high schools high poverty schools that should be included in the program? Are lower poverty elementary schools receiving funds at the expense of needier high schools? Simulations using data from one district in our sample revealed the following:

- If, as is typical, high schools in a district are lower than the district average in poverty, then using grade band averaging and qualifying high schools will make the district's Chapter 1 schools less poor overall.

- If adding high schools will require increasing the number of children served in each Chapter 1 school by decreasing the total number of schools qualified, Chapter 1 will be serving a higher achieving group of students than it was before high schools were served.

From data in our sample, it appears that the decision to include high schools in Chapter 1 should remain a local one, and districts should carefully evaluate the effects of implementing any such change in targeting before making a decision.

# IV. STUDENT SELECTION

## Chapter Overview

Once districts have chosen the schools that will receive Chapter 1 funds, the students who are to participate in the program are selected. In this chapter we examine the process districts in our sample use to determine which students in Chapter 1 schools will participate in Chapter 1 reading programs at the elementary grades. Analyses presented in this chapter use data on students in grades 2 through 6, unless otherwise noted. Few districts in our sample have student-level data on junior high/middle school students and fewer still have data on secondary level students. The small size of the sample at the upper grades and the fact that Chapter 1 students are primarily elementary school students led us to focus on student selection for Chapter 1 at the elementary grades.

The analyses are also restricted to examinations of student selection for Chapter 1 services in reading only. All 30 districts in our sample have Chapter 1 reading programs, but not all have math programs. Those districts that do offer Chapter 1 instruction in both basic skills areas serve far fewer students in math than reading. Thus, we decided to examine in detail the selection of students for Chapter 1 reading services.

We show that Chapter 1 elementary students in our sample have average reading achievement test scores nearly one standard deviation below non-Chapter 1 students in the same schools and that the Chapter 1 students are among those in greatest educational need. In every district in our sample except one, we find that there are elementary students in Chapter 1 schools whom their districts consider to be educationally deprived who do not participate in Chapter 1. However, we show that nearly half of this group receives special services from some other type of education program. When all of the various categorical programs available to the educationally deprived are examined, we find that nearly one-half of the districts in our sample have over 80% of their educationally deprived elementary students in Chapter 1 schools participating in some type of categorical education program. Furthermore, the educationally deprived in Chapter 1 schools who are not served by any program are a higher scoring group than those in Chapter 1, and they tend to score just below their district's cutoff score for Chapter 1 eligibility.

In our sample the methods of selecting students for the program generally fall into four categories. They involve selecting students based on (a) test scores, (b) a single composite score derived from two or more measures, (c) a two-step process involving test scores for determining initial eligibility and a second factor (e.g., teacher judgment) to determine final selection, and (d) a two-step process in which teacher judgments determine initial eligibility and test scores are used for final selection. By simulating the four methods, we show that within districts students with very similar characteristics would be selected under any of the methods.

Districts in our sample do serve students in Chapter 1 who have scored above their district's criterion for eligibility. Such students generally score just above the cutoff score. The unreliability of tests and the use of professional judgment to override assignment based on the selection criterion alone account in part for the presence of these students. In addition, the way in which districts in our sample use the "formerly eligible" option seems to account for the retention in Chapter 1 of some former Chapter 1 students who score above the cutoff for eligibility. Finally, the participation in Chapter 1 by districts in our sample with high achieving populations (or low concentrations of educationally deprived students) also tends to contribute to the number of higher achievers being served by Chapter 1. These districts serve their educationally deprived students at the same rate as other types of districts; however, some of these districts include higher achievers in order to fill openings remaining in their Chapter 1 classes.

In our sample there were some districts that had both higher proportions of educationally deprived students not receiving any categorical service and higher proportions of higher achievers in their Chapter 1 programs. Although they did not share any common demographic features, they do have other elements in common. In some of these districts, the schools do not implement district policy in a standardized way. In other sites, there is no strict district policy and teachers at each school are encouraged to use their judgment to decide who should be served.

## What Are The Characteristics of Chapter 1 Students?

### A National Perspective[3]

Nationwide about 10% of children received Chapter 1 services in 1983-84 with percentages from individual states ranging from 4% to 20%. Of the 4.8 million Chapter 1 participants, 75% received instruction in reading and 46% received instruction in mathematics, the two primary subject matter areas in which Chapter 1 services are centered.

A growing proportion of Chapter 1 students nationally are limited-English-proficient. In 1983-84, 12% of the program participants received English instruction for limited-English-proficient (LEP) students as a Chapter 1 service. The number of LEP students participating in Chapter 1 has increased by 58% over the five-year period beginning in 1979-80.

While special education students are estimated to represent 11% of the national schoolage population (U.S. Department of Education, 1984), no national data are available as to the extent to which special education students are present in the Chapter 1 program nationally.

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[3] Unless noted otherwise, national statistics about Chapter 1 students are based on data reported by Anderson and Stonehill, 1986.

Current information about the proportion of Chapter 1 students who are from low-income families also is not available. However, 1976 data on Title I students (Breglio, et al., 1978) showed that the poverty rates among Title I elementary school students were higher than for elementary school children as a whole. About 41% of Title I elementary students in 1976 were from low-income families compared to a figure of 21% for all public elementary school children nationwide.

Annual achievement data on the reading performance levels of Title I/Chapter 1 students shows Chapter 1 elementary students achieving at the 24th percentile on the average, well below the 50th percentile that marks the national average.

In the section below, we present the characteristics of the Chapter 1 participants in our 30-district sample. While the 30-district sample is not nationally representative (e.g., high-poverty districts are over-represented in the sample compared to their proportion in the nation), the small number of districts allows us to examine the characteristics of Chapter 1 students in our sample in greater detail and, in later sections of this chapter, to link student selection practices to the characteristics of Chapter 1 students in our sample districts.

## Characteristics of the Chapter 1 Students in Our Sample

Ratio of Chapter 1 participation to enrollment levels. Table 19 presents the Chapter 1 population in the study sample as a proportion of (a) the total district enrollment, including all grade levels and schools; (b) the enrollment at the grades served by Chapter 1; and (c) the enrollment in grades served by Chapter 1 in Chapter 1 schools. For the 30 districts, Chapter 1 students represent 16% of the total district enrollments, 19% of the students in the grades served by Chapter 1, and 27% of the students in grades served by Chapter 1 in Chapter 1 schools. For all three types of proportions the percentage of students in Chapter 1 increases as district poverty increases. For instance, in the five low-poverty districts, Chapter 1 students are only 2% of district enrollment. In the six very high-poverty districts, Chapter 1 students represent nearly 20% of district enrollment.

In the high-poverty districts in our sample, nearly all schools at the grades served by Chapter 1 are Chapter 1 schools. Thus for these districts the percentage of Chapter 1 enrollment at grades served is the same as the percentage of Chapter 1 students in Chapter 1 schools, as indicated in Table 19.

Table 19

Ratio of Chapter 1 Students to Various Enrollment Counts in Our Sample by District Poverty Range

| | Chapter 1 Students as a Proportion of: | | |
|---|---|---|---|
| District Poverty Range | Districtwide Enrollment[a] | Enrollment at Grades Served by Chapter 1[b] | Enrollment in Chapter 1 Schools[b] |
| Low to Moderate (0 to 12%) | .02 | .02 | .11 |
| Medium (13% to 20%) | .06 | .10 | .21 |
| High (21% to 50%) | .18 | .19 | .27 |
| Very High (>50%) | .19 | .28 | .28 |
| All | .16 | .19 | .27 |

[a] Figures are based on counts in district Chapter 1 applications.

[b] Figures are based on sample of grade levels in district data bases.

Ratio of Chapter 1 reading to math students. Six of the 30 districts in the sample operate Chapter 1 reading programs only. The other districts provide services in both reading and math. Within districts that provide instruction in both subject areas, for every five students who are served in reading, there are three students who participate in math. For the entire sample, the ratio of Chapter 1 reading students to Chapter 1 math students is 4 to 1.

Limited-English-proficient students. In the 13 districts that were able to provide data as to the limited-English-proficiency (LEP) status of their students, 7% of their Chapter 1 students are limited-English-proficient. Percentages of LEP students in Chapter 1 range from less than 1% to 95% across the 13 districts. For the same districts, LEP students represent about 4% of the total enrollment in Chapter 1 schools.

Special education students. Twenty-seven of the 30 districts were able to provide data on student participation in special education. In these districts, special education students represent 11% of the Chapter 1 participants. The percent of Chapter 1 students who are in special education varies from zero to 42% across the 27 districts. In our sample, special education students are 11% of the total enrollment in Chapter 1 schools.

Poverty rate among Chapter 1 students in the sample. In the 23 districts in our sample that provided student-level poverty data, 71% of the Chapter 1 participants are poor. In the same districts about 53% of the students in Chapter 1 schools are poor. (While our sample of districts includes a wide range of poverty levels, high-poverty districts are overrepresented.)

Reading achievement level. The mean reading achievement score of Chapter 1 elementary students in the sample is 37 NCEs or the 27th percentile. Table 20 presents mean achievement scores for students in the sample by grade. Mean scores of Chapter 1 students in our sample are lowest for first graders (27 NCEs) and highest for third graders (39 NCEs).

Table 20

Mean Reading Achievement Scores of Chapter 1 Students and Non-Chapter 1 Students in Chapter 1 Schools Only, by Grade for 30-District Sample

| | | Chapter 1 | | Non-Chapter 1 | | |
|---|---|---|---|---|---|---|
| Grade | # of Districts | # of Students | Mean Reading Score (NCE)[a] | # of Students | Mean Reading Score (NCE) | Difference |
| 1 | 7 | 795 | 27 | 2,393 | 55 | 28 |
| 2 | 18 | 3,845 | 34 | 11,456 | 59 | 25 |
| 3 | 20 | 7,459 | 39 | 15,728 | 57 | 18 |
| 4 | 24 | 4,557 | 35 | 14,533 | 55 | 20 |
| 5 | 24 | 7,441 | 38 | 20,021 | 55 | 17 |
| 6 | 21 | 4,656 | 35 | 17,055 | 54 | 19 |
| All 1-6 | | 28,753 | 37 | 71,968 | 56 | 19 |

[a] NCEs, like percentiles, range from 1 to 99 with a midpoint of 50. Unlike percentiles, they are assumed to be equal-interval scores.

In our sample of 30 districts, when Chapter 1 students are compared to non-Chapter 1 students in the same school, Chapter 1 students have lower mean reading scores at every grade (see Table 20). In general, the Chapter 1 students in our sample score nearly one standard deviation (21 NCEs) below the non-Chapter 1 students in the same schools.

## Are There Educationally Deprived Students Who Are Not Being Served by Chapter 1?

### Overview

Policy makers have been concerned that Chapter 1 services are not reaching all the students the program is intended to serve. Questions have been raised about the characteristics of the students who are served compared with other students who are considered educationally deprived but do not participate. Of particular interest is the level of educational need among these two groups.

A national study conducted 10 years ago (Breglio, et al., 1978) reported finding large percentages of students who were eligible for

Title I but were not served. Recent reanalyses of these data (Kennedy, et al., 1986) showed that as many as 61% of the students in Title I schools having a basic skills total score at or below the 25th percentile were not served by Title I in 1976. Considering all of the students in Title I schools scoring at or below the 50th percentile, an estimated 70% were not participating in Title I. These findings raise questions about whether current Chapter 1 services are reaching the educationally deprived.

The legal framework of Chapter 1 gives local districts considerable latitude in how they define who is "educationally deprived." In attempting to determine whether there are educationally deprived students in the 30-district sample who are not being served by Chapter 1, we used both a standard, uniform criterion across districts and a district's local criterion in making an assessment. Regardless of the definition of "educational deprivation" that is used, we find that there are large percentages of educationally deprived students in Chapter 1 schools who are not being served by Chapter 1. However, we show that many of the educationally deprived who are not in Chapter 1 are participating in other types of categorical education programs, such as special education or bilingual/ESL programs. Indeed, as will be discussed in more detail below, for the districts in the sample, the combined available education programs serve all but 19% of those considered educationally deprived by their districts. An examination of the achievement scores of educationally deprived students who are not participating in any program reveals that they have higher scores than the educationally deprived Chapter 1 participants and that nearly half of this group has scores near the cutoff criteria that their districts have established for Chapter 1 eligibility.

### How many educationally deprived students in Chapter 1 schools are not being served by Chapter 1?

Standardized definitions of educationally deprived. It has become almost traditional to evaluate Title I/Chapter 1 student selection by looking at the students who score in the lowest quartile and in the bottom half of the national distribution on a standardized test and determining what proportion of such students participate in Chapter 1. In the 30-district sample, about 37% of the elementary students in Chapter 1 schools in the lowest quartile in reading achievement are not being served by Chapter 1. In our sample, considering all students in Chapter 1 elementary schools who scored at or below the national mean in reading, approximately 52% do not participate in Chapter 1.

Locally determined definition of educationally deprived. In our sample, not all students in the second quartile in reading achievement are considered educationally deprived by their districts. Only six of the 30 sites use the 50th percentile as a cutoff score to define the Chapter 1-eligible pool. Most of the districts have cutoff scores above the 25th percentile (NCE of 36) and below the 50th (NCE of 50). The frequency of use of percentile cutoff scores for Chapter 1 eligibility in our sample is shown in Table 21.

Table 21

Number of Districts in Sample Having Cutoff Scores in Each Percentile Range to Select Chapter 1 Elementary Students in Reading

| Percentile Range | Number of Districts in Sample |
|---|---|
| 50 | 6 |
| 45-49 | 2 |
| 40-44 | 8 |
| 35-39 | 3 |
| 30-34 | 3 |
| 25-29 | 3 |
| < 25 | 2 |

Note. Total does not add to 30 because two districts had composite scores with cutoff scores that could not be converted to percentiles and a third district had cutoff scores in grade-equivalent scores.

By replicating the student selection procedures used by each district, we find that approximately 37% of those students in Chapter 1 elementary schools who are educationally deprived in reading according to their district's definition do not receive Chapter 1 services (see Appendix D for a description of these simulations). As shown in Table 22, the percentages range across the 30 districts from a high of 83% to a low of zero unserved educationally deprived students.

Using a local definition of who is educationally deprived rather than a uniform definition produces higher estimates of how well our sample of districts is reaching the intended beneficiaries of Chapter 1. Nonetheless, even the application of local criteria indicates that, on the average, as many as 37% of the educationally deprived students in Chapter 1 elementary schools in our sample are not participating in Chapter 1 reading programs.

Why are some educationally deprived[4] students in Chapter 1 schools not participating in Chapter 1 reading programs?

The presence of other categorical programs in Chapter 1 schools shapes Chapter 1 participation, since some students eligible for Chapter 1 are skipped because they receive service from another program. Previous national studies that have not examined participation in programs such as special education and bilingual/ESL, have shown large percentages of educationally deprived students remaining unserved. Data from our sample suggest that many of these students, however, are receiving other forms of special service.

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[4] The analyses reported throughout the remainder of this chapter use local district criteria to determine who is educationally deprived.

Table 22

Percent of Educationally Deprived Students in Our Sample's Chapter 1 Elementary Schools Not Participating in Chapter 1 by District According to District Achievement Level

| District Achievement Level | District Code | # Educationally Deprived in Chapter 1 Schools | % Educationally Deprived in Chapter 1 Schools Not in Chapter 1 |
|---|---|---|---|
| Low (46-47 NCEs) | | | |
| | J2 | 100 | 43 |
| | O2 | 245 | 13 |
| | S2 | 2,585 | 31 |
| | L1 | 1,652 | 53 |
| | O1 | 2,949 | 36 |
| | H2 | 100 | 60 |
| Medium (48-52 NCEs) | | | |
| | M2 | 326 | 33 |
| | R1 | 1,247 | 60 |
| | C1 | 1,891 | 41 |
| | M1 | 1,446 | 46 |
| | S1 | 8,312 | 34 |
| | E1 | 126 | 75 |
| | G1 | 792 | 68 |
| | C4 | 728 | 40 |
| | H1* | 205 | 47 |
| | D2 | 6,005 | 37 |
| | S3 | 1,670 | 49 |
| High (53-56 NCEs) | | | |
| | P2 | 1,694 | 54 |
| | B2 | 113 | 65 |
| | D1 | 8,700 | 21 |
| | S5 | 383 | 56 |
| | L2 | 935 | 36 |
| | C5 | 220 | 81 |
| Very High (57-66 NCEs) | | | |
| | P1 | 77 | 30 |
| | B1 | 409 | 21 |
| | S4 | 30 | 0 |
| | J1 | 9 | 44 |
| | C2 | 100 | 72 |
| | S6 | 61 | 3 |
| | M3 | 6 | 83 |

*Note*. Data are based on samples of grade levels that differ from district to district and the definition of educational deprivation uses each district's local criterion.

*Since H1 is the only high school district in the study, the figures are for grades 7 and 8.

Slightly over 80% of the students considered educationally deprived by our sample districts participate in some type of categorical education program. Students who are participants in a special education program, a bilingual/ESL program, state compensatory education program, or a Chapter 1 migrant program are less likely to participate in Chapter 1. Districts in our sample represent a variety of approaches to the issue of students who are eligible for multiple programs.

In the 27 districts for which we had complete student program participation data, 18% of the students whom their districts consider to be educationally deprived participate in some type of categorical program other than Chapter 1. Across the sample, the percentage of educationally deprived who are not in Chapter 1 and are in some other program ranged from zero to 44%. Table 23 presents, by district, the percentages of educationally deprived in each education program, ordered by district achievement level.

The rightmost column of Table 23 shows for each district the total cumulative percentage of those who are educationally deprived (using local definitions) in Chapter 1 elementary schools who participate in some type of categorical educational program. These cumulative percentages average 81% across the 27 districts for which we had complete program participation data, and they range from 44% to 100%. Six of the districts provide some type of categorical education program to over 95% of the educationally deprived students in their Chapter 1 elementary schools.

Relationship among the participants of categorical programs. In general, participation in other categorical programs such as special education programs, bilingual education programs, and state compensatory education programs decreases an educationally deprived (as locally defined) student's chances of participating in Chapter 1. While it is legally possible for students to participate in Chapter 1 together with the other categorical programs for which they qualify (e.g., special

## Table 23
## Percent of Educationally Deprived Students in Chapter 1 Elementary Schools Served By Each Categorical Program and Across Programs by District

| District Achievement Level | District Code | Number Educationally Deprived in Chapter 1 Elementary Schools | Percent in Chapter 1 | Percent Not in Chapter 1 and in: | | | | | Cumulative Percentage Served by Some Program |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Spec. Educ. | State Comp. Educ. | Bilingual/ ESL | Migrant | Other | |
| Low (46-47 NCEs) | J2 | 100 | 57.0 | 4.0 | | | 39.0 | | 100.0 |
| | O2 | 245 | 86.8 | 0.4 | | | | | 87.2 |
| | S2 | 2,585 | 68.7 | 13.5 | | | | | 82.2 |
| | L1 | 1,652 | 46.9 | 16.0 | | | | | 62.9 |
| | O1 | 2,949 | 64.1 | 14.8 | | 2.7 | | | 81.6 |
| | H2 | 100 | 40.0 | 0.0 | | | | | 40.0 |
| Medium (48-52 NCEs) | M2 | 326 | 66.6 | 9.2 | | | | | 75.8 |
| | R1 | 1,247 | 40.4 | 29.2 | 4.9 | 9.0 | | | 83.5 |
| | C1 | 1,891 | 59.4 | 5.1 | | | | | 64.5 |
| | M1 | 1,446 | 54.5 | 4.1 | | | 39.8 | | 98.4 |
| | S1 | 8,312 | 65.5 | 6.6 | | | | | 72.1 |
| | E1 | 126 | 25.4 | 11.1 | | | | 28.6 | 73.0 |
| | G1 | 792 | 31.9 | 19.3 | 23.2 | | | | 74.4 |
| | C4 | 728 | 59.8 | DK | | | | | DK |
| | H1 | 205 | 53.2 | 14.1 | | 2.9 | 3.4 | | 73.6 |
| | D2 | 6,005 | 63.1 | DK | 11.0 | | | | DK |
| | S3 | 1,670 | 50.9 | DK | | 5.7 | | | DK |
| High (53-56 NCEs) | P2 | 1,694 | 46.0 | 16.7 | | 5.7 | | | 68.4 |
| | B2 | 113 | 35.4 | 16.8 | | | | 8.8 | 61.0 |
| | D1 | 8,700 | 79.4 | 17.0 | | 0.5 | | | 96.9 |
| | S5 | 383 | 44.1 | 8.3 | | | | | 52.4 |
| | L2 | 935 | 64.3 | 18.8 | | | | | 83.1 |
| | C5 | 220 | 18.6 | 37.3 | | | 6.8 | | 62.7 |
| Very High (57-66 NCEs) | P1 | 77 | 70.1 | 14.3 | | | | | 84.4 |
| | B1 | 409 | 79.4 | 7.3 | | | | | 86.7 |
| | S4 | 30 | 100.0 | 0.0 | | | | | 100.0 |
| | J1 | 9 | 55.6 | 0.0 | | | | | 55.6 |
| | C2 | 100 | 28.0 | 29.0 | | 3.0 | | | 60.0 |
| | S6 | 61 | 96.7 | 1.6 | | | | | 98.3 |
| | M3 | 6 | 16.7 | 83.3 | | | | | 100.0 |

DK = do not know

education, bilingual programs), in practice many districts attempt to limit or prevent the participation of LEP and special education students in the Chapter 1 program. District policies in our sample concerning the participation of such students in Chapter 1 are described later in this section.

Using student-level data from 12 of the largest districts in our sample, we computed multiple regression equations to help determine what characteristics of students in Chapter 1 schools most affected whether a student was a Chapter 1 participant. A variety of characteristics were examined. They include the following: (1) whether or not a student participates in (a) a special education program, (b) program(s) for limited-English-proficient students, and (c) a state compensatory education program; (2) the student's NCE score on a standardized reading test (the scores of special education students are treated separately from those of other students); (3) whether the student is from a low-income family; and (4) whether or not the student is classified as limited-English-proficient.

The technical results of multiple regression analyses are presented in Table A-8 in Appendix A. One of the major findings of these analyses is that the lower the reading test score, the higher the chances of being a Chapter 1 participant, except for special education students. Participation in special education is generally associated with non-participation in Chapter 1. Very low scoring and very high scoring special education students do not typically participate in Chapter 1. Students who participate in both Chapter 1 and special education tend to score higher than educationally deprived students who are only in special education, and lower than educationally deprived students who are only in Chapter 1.

A second finding of these analyses is that being LEP increases the likelihood of Chapter 1 participation but participation in a bilingual program decreases Chapter 1 participation. State compensatory education participation also decreases the likelihood of participation in Chapter 1. Being from a low-income family increases the likelihood that a student will be a Chapter 1 participant.

Most districts offer a variety of services and programs in addition to Chapter 1 to educationally deprived students. Some of these are migrant education, Indian education, state compensatory education, bilingual education, and special education services. Two of these service categories--special education and services to LEP students--occurred with sufficient frequency in the study sample so that detailed information was collected to illustrate how selection practices for these programs interact with selection for Chapter 1 services.

Policies about Chapter 1 services to LEP students. The 13 districts in our sample that have LEP students reflect three approaches to Chapter 1 participation by LEP students. Three districts have policies to exclude LEP students from Chapter 1 or to limit each student to one pullout program. Three districts have no formal policy at all. Seven districts have policies to include LEP students in Chapter 1 and within this group some use the Chapter 1 program to provide ESL instruction. In many cases, however, within our sample of districts, the district policy and the student level data tell slightly different stories.

The three districts with policies to exclude LEP students from Chapter 1 are nevertheless serving LEP students nearly in proportion to their presence in Chapter 1 schools (see Table 24).

The three districts in our sample with no specific policy on the coordination of student selection for Chapter 1 and LEP services are serving LEP students in slightly greater proportion than their presence in Chapter 1 schools. In these three districts, students are selected independently for ESL or bilingual programs and Chapter 1.

Table 24

Percent of Chapter 1 Participants in Selected Districts in Our Sample Identified as Limited-English-Proficient by District Policy

| District Policy | # of Districts | Chapter 1 Participants Who Are LEP # | Chapter 1 Participants Who Are LEP % | Chapter 1 School Enrollment That Is LEP # | Chapter 1 School Enrollment That Is LEP % |
|---|---|---|---|---|---|
| Excludes LEPs | 3 | 153 | 3.9 | 573 | 3.1 |
| No Policy or Coordination | 3 | 104 | 8.4 | 327 | 7.2 |
| Includes LEPs/ Coordination | 7 | 781 | 8.0 | 1,984 | 4.6 |
| Overall | 13 | 1,038 | 7.0 | 2,884 | 4.3 |

The last group of seven districts within our sample attempts to coordinate instruction of LEP students and Chapter 1 in a variety of ways. Administrators at two of these sites state that only certain LEP students are eligible--those who receive high scores on a language assessment instrument and those who are being mainstreamed.

At the remaining sites, the Chapter 1 program is partially designed to serve LEP students. In one district in which half of the elementary school students are LEP, the entire Chapter 1 program at kindergarten and first grade is designed for LEP students. Two other districts whose LEP populations are around 7% of their enrollments also have special Chapter 1 classes for LEP students. In the remaining two districts, the primary reason for combining LEP and Chapter 1 services is cost effectiveness. In these districts, small numbers of LEP students and/or limited funding make it difficult to provide a separate program. Thus in these sites LEP students are served by Chapter 1 teachers if no other service is available, or aides supervised by Chapter 1 teachers are paid to work with LEP students. As a group, districts that coordinate Chapter 1 and services to LEP students have nearly double the proportion of LEP students in their Chapter 1 program that they have in their Chapter 1 schools.

Our sample of districts reflects a variety of policies regarding the participation of LEP students in Chapter 1. Whether or not a LEP student participates in Chapter 1 is determined to a great extent by whether or not other resources (e.g., bilingual/ESL) are available to serve LEP students.

Policies about Chapter 1 services to special education students. Our 30 sites illustrate two different approaches to handling the issue of participation in Chapter 1 by special education students. In nearly half the districts in our sample (14 of 30 districts) district personnel believe that there should be no overlap in participation in the two programs, while in the remaining 16 districts some overlap is advocated under varying circumstances.

The 14 districts that maintain a policy of mutually exclusive program participation in Chapter 1 and special education provide three different rationales for this policy:

- a belief that federal law excludes special education students from Chapter 1;
- a concern that participation in two pullout programs and working with three different teachers will fragment the school day to the student's detriment; and
- a desire to reach greater numbers of needy students by limiting the participation of each student to only one program.

Some districts stated that no overlap was permitted between Chapter 1 and special education programs and gave descriptions of the implementation of this practice. In one site, a case manager is responsible for reviewing the educational needs of all students selected for both programs and selecting the most appropriate program. In other sites, when special education students are eligible for Chapter 1, they are "skipped" in favor of students who are not served by any other program.

Other districts that maintain a no overlap policy are less precise in their expectations. Some stated their policy in terms of a "preference" or a "practice" but acknowledged that exceptions exist. Staff in several districts explained that students who are undergoing special education assessment can remain in Chapter 1 until the assessment is complete. In one district, students can remain in both programs until the end of the year. Special education staff at several districts explained that some parents of identified special education students refuse to let their children participate in special education classes. In such cases, the students are frequently placed instead in Chapter 1 as a compromise.

Even when districts have policies against students participating in multiple programs, within-district variation can be found. In one such district, school personnel are unaware of their district's policy, while in another district, there is variation across the Chapter 1 schools in the extent to which they implement the district's policies of excluding special education students from Chapter 1.

In the remaining 16 districts, some coordination of the selection of students for Chapter 1 and special education services is planned (see Table 25). In five districts, concurrent services are provided as long as they are in different subject areas, such as reading in Chapter 1 and math in special education. Four districts provide Chapter 1 services to specified categories of special education students, such as the physically handicapped. In two districts, mainstreamed special education students receive Chapter 1 services only if specified on their Individual Educational Plan (IEP). Three districts allow service in both programs as long as the student meets the requirements for each program. Finally, three other districts state that some students are served by both programs but do not articulate an explicit policy.

Table 25

Distribution of Sample Districts According to Policies for Selecting Chapter 1 and Special Education Students

| Policy or Practice | Number of Districts[a] |
|---|---|
| No overlap between special education and Chapter 1 | 14 |
| Overlap among participants allowed: | |
| - when programs provide instruction in different subject areas | 5 |
| - when special education students are in specified handicap categories | 4 |
| - when each program's requirements are met | 3 |
| - when required in the individual educational plan of the special education student | 2 |
| - but no policy is articulated | 3 |

[a] One district is counted twice because it requires that only special education students having particular handicaps may participate in both programs and that the programs must provide services in different subjects.

In these 16 districts the selection of students for Chapter 1 and special education programs is implemented in various ways. Two districts have special service committees at each school to oversee program selection and coordination. Many districts report using the IEPs of special education students to avoid duplicating services in Chapter 1. Several districts specify a priority for assigning a student to a program. For example, special education is to take precedence with Chapter 1 services to be provided only if appropriate.

It is likely that school districts consider similar issues when deciding whether students who are participating in state compensatory education, migrant education, or other categorical programs should also receive Chapter 1 services. (The special case of state compensatory education is discussed in greater detail in relationship to the option of skipping students who are receiving comparable services.) If what occurs with limited-English-proficient students and recipients of special education services is illustrative, there will be considerable variation in district practice, though a majority believe in applying the rule of "one categorical program per student."

## Why are there educationally deprived students who are not participating in any type of categorical program?

Nineteen percent of the educationally deprived elementary students in Chapter 1 schools in our sample are not participating in any type of categorical program. As a group they have a higher average achievement score compared to educationally deprived students in other programs, and they tend to score near their district's cutoff score for Chapter 1 eligibility.

Systematic differences were found in the achievement levels of various subgroups of educationally deprived students in the 11 largest districts for which we had program participation data. Table 26 shows that the educationally deprived in Chapter 1 elementary schools who are not participating in any type of program are the highest scoring subgroup followed by those participating only in Chapter 1. This table also shows that educationally deprived students who participate in both Chapter 1 and special education score lower than those who participate only in Chapter 1, and educationally deprived students who are in special education only score the lowest.

Forty-four percent of the unserved educationally deprived students in Chapter 1 elementary schools score within 5 NCEs of whatever cutoff score is used to define local Chapter 1 eligibility. This percentage is based on data from 13 districts, excluding those where composites are used for selection or where the size of the unserved group is too small to provide a stable distribution. (See Table A-9 in Appendix A for details of these 13 districts.) The distributions follow very similar patterns across the districts. Typically, there is a group of students

Table 26

Mean Achievement Level of Educationally Deprived Students in Selected Sample Districts by Type of Program

| Type of Program | Educationally Deprived N | Educationally Deprived % | Average Reading Score NCEs | Average Reading Score Percentiles |
|---|---|---|---|---|
| No program | 8,048 | 23 | 34 | 22 |
| Chapter 1 only | 20,119 | 57 | 32 | 20 |
| Special education and Chapter 1 | 2,278 | 6 | 28 | 15 |
| Special education only | 5,015 | 14 | 26 | 13 |
| Overall | 35,460 | 100% | 31 | 18 |

Note. Data are based on 11 of the largest districts in our sample that had program participation information, and educational deprivation is locally defined.

who have very low reading scores they might obtain by simply guessing at the answers, and there is a second larger group that scores within a few points of the cutoff score. The remainder of the students are somewhat evenly distributed across the scores above the chance level and below 5 NCEs of the cutoff. This distribution occurs regardless of where a district sets its cutoff score. The frequency distribution of scores for unserved educationally deprived students in district C1 is shown in Table 27 to illustrate the pattern. In this district 55% of the unserved students score within 5 points of the district cutoff score of 42 NCEs.

In general, it appears that nearly half the educationally deprived students in Chapter 1 elementary schools in our sample who are unserved by any program score very close to the district-established cutoff score for Chapter 1 eligibility. Thus, the Chapter 1 program may have been filled to its desired size with lower-scoring students, or possibly some form of professional judgment was used to make decisions about where to place students with marginal scores. Similarly, professional judgment may also be coming into play in excluding very low-scoring students

Table 27

Distribution of Reading Scores (in NCEs) of Students in District C1 Who Score Below the Cutoff for Chapter 1 Eligibility and Do Not Participate in Any Categorical Education Program

| NCE Score Reading | Number of Students Receiving Score |
|---|---|
| 1 | 24 |
| 2 | 3 |
| 9 | 2 |
| 22 | 1 |
| 23 | 3 |
| 24 | 8 |
| 27 | 4 |
| 28 | 11 |
| 29 | 5 |
| 30 | 26 |
| 31 | 2 |
| 32 | 26 |
| 33 | 32 |
| 34 | 29 |
| 35 | 38 |
| 36 | 48 |
| 37 | 41 |
| 38 | 50 |
| 39 | 63 |
| 40 | 84 |
| 41 | 92 |
| 42 | 78 |

whose test scores are judged to be invalid. Additional data from two districts presented below give other, probably common, reasons students remain unserved--lack of room in the program, parental refusal, adequate classroom performance, and withdrawal from the school.

Additional reasons for not serving some of the educationally deprived. For two districts in the sample, records are available that indicate some of the additional reasons for not including a low-scoring student in the Chapter 1 program. In district E1, there are 80 students eligible for Chapter 1 who are not participating in any categorical program. Ten of these students were in Chapter 1 last year and are performing well enough in the regular classroom that they receive Chapter 1 services only on an occasional basis. Thirteen are on the waiting list to receive Chapter 1 services and until openings become available they are seen only periodically by Chapter 1 personnel. Another 13 students either have parents who have not given approval to participate, have moved, or are awaiting placement to some other educational program. The reasons why the remaining 44 students are not served are not noted.

In district 01, explanations are available as to why 253 of the 619 students (41%) are eligible but not served by Chapter 1. Nearly 100 are on a waiting list for Chapter 1 service. Additional small numbers of students either have moved (six students), or have difficulty understanding English (55 students) so that they have not been included in Chapter 1. District 01 allows students who are referred by their teachers to be retested in the fall if they scored too high on the spring test to qualify for Chapter 1 but school staff believe that the student should participate. Of the 619 unserved but eligible students in district 01, 42% of them achieved eligibility based on their fall retest score.

Information from these two districts about the reasons why some eligible students are not in Chapter 1 illustrate the variety of circumstances beyond test score considerations that affect program placement. It is likely that factors such as these influence program assignment decisions in almost all districts.

## Summary

Only one district in our sample serves all of the students in Chapter 1 elementary schools whom it considers educationally deprived. The other districts provide Chapter 1 reading services to a subset of the students in their Chapter 1 elementary schools whom they define as educationally deprived. Educationally deprived students in Chapter 1 elementary schools who do not participate in Chapter 1 tend to be participating in some other type of categorical education program or to score near the cutoff for Chapter 1 eligibility. In our sample of those students in Chapter 1 elementary schools locally defined as educationally deprived, 63% participate in Chapter 1, 18% receive special services from other educational programs, and 19% participate in no special program. This latter group is the highest achieving group of the three.

## Does the Legal Framework Contribute to Some Educationally Deprived Students Not Being Served?

### Overview

The parts of the legal framework that pertain to student selection allow districts considerable flexibility in defining which students are educationally deprived. In addition, student selection options are available to districts to accommodate their special circumstances. Policy makers have been concerned that the lack of clearly prescribed standardized methods for selecting Chapter 1 students or misuse of the student selection options may lead to discrepancies in targeting services.

Districts in our sample are taking advantage of the flexibility afforded by the legislation in their student selection practices. We show, however, that within a district, the variety of selection methods being used (e.g., test score only, test score followed by teacher judgment, composite of scores) will result in similar types of students being selected. Within a district, application of each of the four basic selection methods we examined can produce groups of participants having similar characteristics. Of the student selection options available, only two of the four options (i.e., comparable services and transferred participants), could contribute to eligible students not being served. (The other two options are discussed later in terms of their contributing to the presence of higher achievers.) These options affected so few students in our sample that they did not account for any significant number of educationally deprived students in Chapter 1 elementary schools not participating in Chapter 1 reading.

## Do differences in the student selection methods account for some educationally deprived students not being served?

Four types of student selection strategies are represented in our sample. Simulations of the four strategies indicate that they are equally effective for identifying students who are most educationally deprived.

Districts in our sample differ in the proportion of their populations that they define as educationally deprived, ranging from 6% to 67%. In general, the lower achieving the district, the larger the proportion of the population it defines as educationally deprived. A correlation of -.66 was found between district reading achievement score (which ranged from 46 to 66 NCEs) and proportion of students who are educationally deprived as defined by the district.

Specific selection strategies. A review of student targeting practices in our sample of 30 LEAs indicates that four student selection strategies are represented:

- Selection is based on test scores. All students scoring below an established value are eligible for service.
- Selection is based on a single composite score that is derived from two or more such as: (a) scores on standardized achievement tests, (b) scores on criterion-referenced tests, (c) classroom grades, and (d) teacher judgments.
- Selection is a two-step process. Preliminary eligibility is based on test scores, and final selection is based on some other factor such as teacher judgment.
- Selection is a two-step process. Preliminary eligibility is based on teacher judgments of need. Final selection is based on test scores.

Distinctions among these four selection strategies are not always clear cut and variations within strategy were frequently observed in our 30-site sample. Some of these variations are worth discussing here. Even districts that describe their selection practices as based entirely on test scores appear to consider other factors in the selection process. At several sites, for example, students are retested--suggesting that the validity of their initial scores was questioned. Not surprisingly, some of the initially ineligible students became eligible upon retesting. The students who ultimately receive services, however, are not entirely consistent with either set of scores. Some other judgments obviously are involved in the final selection process.

Table 28 presents findings from a national mail survey of Title I directors (Advanced Technology, 1983) showing the percentage of districts that use various types of student selection practices. While these groups do not correspond exactly to our four strategies, they do give a national perspective on the incidence of some student selection practices.

Table 28

Percent of Title I Directors Nationwide Using Various Student Selection Strategies in 1981-82

| Student Selection Strategy | Percent |
|---|---|
| Combination of test scores and teacher judgment, emphasis on test scores | 31 |
| Combination of test scores and teacher judgment, emphasis on teacher judgment | 29 |
| Combination of test scores and teacher judgment, with no emphasis on either | 16 |
| Test scores only | 15 |
| Parental judgment considered | 8 |
| Other (all 4% or less) | 11 |

Source: Advanced Technology, 1983, Local operations of Title I, ESEA 1976-1982: A resource book.

In districts where composite scores derived by combining scores from two or more measures (e.g., quantified teacher judgments and test scores) are used for selection, several different methods for generating the composite were observed--some quite elaborate. In general, the intention is to give the components equal weight in the composite although this goal is achieved with varying degrees of success.

In our sample, sequential selection procedures most frequently involve test scores first, and then teacher judgments. One district, however, defines as eligible all students whose test scores fall below the 20th percentile (except for some special and bilingual education program participants) as well as those students between the 20th and 40th percentiles who are one or more "units" below grade level in their classroom basal reading series. In this instance we treated classroom reading assignments as a form of teacher judgment and classified the selection strategy as one where eligibility is determined by test score and selection by teacher judgment.

Teacher judgments are rarely used as the sole criterion for selecting Chapter 1 participants nationally and within our sample. Perhaps the closest to the exclusive use of teacher judgment in our sample is the selection model used by only one of the 30 districts where eligibility is determined by teacher judgment and selection from among the eligibles is governed by test score.

Simulated comparisons of different selection strategies. When districts can use any of four apparently different selection strategies, a question arises about the outcomes of the selection process. Within a district, do the same students tend to be selected for service regardless of the particular strategy used, or do different strategies result in the selection of different students?

To investigate this issue, we simulated the four selection processes using the data base of a single district. To conduct a simulation of all four student selection strategies, we required two sets of test scores and one independent set of teacher judgments for each student. Only one of our 30 district-level data bases (S2) contained the needed information. Fortunately, however, that data base encompassed a large number of students (3,603 in grades 3 through 6) and thus could provide stable estimates.

District S2, as a general rule, serves only those students who score below the 30th percentile on a standardized achievement test. Although its student selection procedures incorporate teacher judgments as well as test scores, our simulation of the test-score-only strategy used the 30th percentile as a sharp cutoff. All students who scored below that cutoff were classified as selected for Chapter 1 and all students who scored above it were classified as not selected. Using scores from the first testing, 1,583 (44%) of the 3,603 students in grades 3 through 6 in the eligible schools were classified as selected.

To simulate the strategy of selection on the basis of a composite score, we constructed a composite that gave equal weight to teacher judgments and test scores. Students were then ranked in order of their composite scores. We then classified the 1,583 students with the lowest composite scores as selected for Chapter 1 program participation.

To simulate the third student-selection strategy, we classified all students who scored below the 50th percentile on the standardized achievement test as Chapter 1-eligible. From that pool of eligible students we then selected the 1,583 students whom teachers judged to be in the greatest need of services.

To simulate the fourth student-selection strategy we simply reversed the order of the two steps described above. We classified all students who received teacher judgments below the median as Chapter 1-eligible. From that pool of eligible students we then selected the 1,583 students who had the lowest scores on the achievement test.

To ascertain the impacts of the selection strategies, we examined the test scores of the same group of students on a second testing. The mean scores of the selected students are virtually identical for the four strategies--ranging from a low of 29.97 NCEs for the test-score-only strategy to 30.81 NCEs for the third strategy (where eligibility is based on test scores and subsequent selection on teacher judgment). The difference, .84 NCEs, is not statistically significant. The four targeting strategies result in the selection of equally low achieving students.

The results are remarkably consistent across grade levels with the maximum between-strategy differences being 1.03 NCEs at third grade, .66 NCEs at fourth grade, .47 NCEs at fifth grade, and 1.13 NCEs at sixth grade. None of these differences is statistically significant.

We also examined the numbers and percentages of selected students who were minority and who were poor under each of the four selection strategies. These data are presented in Table 29.

Table 29

Numbers and Percents of Selected Students Who Were Minority and Poor as a Function of Selection Strategy

| | Selection Strategy | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Test Only | | Composite | | Test/Judg. | | Judg./Test | |
| Type of Student | N | % | N | % | N | % | N | % |
| Minority | 925 | 58 | 890 | 56 | 889 | 56 | 893 | 56 |
| Poor | 1107 | 70 | 1088 | 69 | 1085 | 69 | 1087 | 69 |

As can be seen from Table 29, the test-only strategy results in the selection of a few more minority students and a few more poor students than any of the other three strategies. Again, the differences are small and not statistically significant. The consistency of the results is interesting to note, however. When test scores are the sole selection criterion, more low achieving, minority, and poor children are selected for program participation than when any of the three selection strategies including teacher judgment is employed.

This simulation involved the data base from only one district. If all the necessary data were available to do this type of simulation in other districts and the correlation between teacher judgment and test score was as strong as in district S2, what might we expect to find? If all four strategies were applied in a district whose students have very different characteristics than those in district S2, the selection strategies would still produce four groups of selected students that were similar to one another. However, these groups would have characteristics different from those found in S2. Across different types of districts the same selection strategy will identify students with different characteristics. Within districts, the different selection strategies will produce groups having similar characteristics.

Of course, there are many aspects of actual student selection that are not reproduced in this simulation. In the simulation, cutoffs were set on a computer and students selected starting from the lowest scoring student and counting up to create the size of group desired. No attention was paid to whether certain students might be receiving other categorical service, and the group was not allowed to grow or shrink. Further, cutoffs were strictly adhered to, which rarely occurs in reality. Thus, the simulation does not allow for the complexities, errors, and decisions to overrule policy which one finds in any school district. However, the simulation illustrates that, at least when teacher judgment and test scores are strongly related, differences in the four strategies themselves will not result in different types of students being selected.

### Do the student selection options contribute to educationally deprived students not receiving service?

Comparable services option. In our sample only 2% of the educationally deprived students are skipped because they are receiving comparable services. Chapter 1 legislation does permit those educationally deprived students who are receiving services comparable in size, scope, and quality to those provided by Chapter 1 to be passed over for service. The comparable services must be funded by non-federal sources. This option is intended to be used to avoid duplication of services to the same individuals.

The comparable services option applies to a limited number of districts and educationally deprived students in our sample. In only three of the 13 districts in our sample where state funds are made available for compensatory education are comparable state-funded services provided in Chapter 1 schools at the grades served by Chapter 1. For these three large urban districts, the comparable services option legally allows 11%, 23%, and 5%, respectively, of the educationally deprived in Chapter 1 elementary schools in those districts to be skipped. Though in an individual district, skipped state compensatory education (SCE) students may be a significant number, across the 30 districts these SCE students represent only 2% of the educationally deprived (locally defined) in Chapter 1 elementary schools.

In the other 10 districts with SCE, the skipping option cannot be used because either (a) the state funds are simply added to the general funds that a district receives and no identifiable services are provided nor are particular students identified for service (three districts), (b) the state compensatory education program is at different grades from Chapter 1 (four districts), or (c) SCE is at the same schools and grades as Chapter 1 but it provides different services (three districts). In the latter case, one district uses its SCE funds to serve limited-English-proficient students, the second district serves students who fail the third grade proficiency test, and the third district serves students who fail the state math competency test in grades 3, 5, and 8.

Transferred participants option. This option, especially designed for districts undergoing desegregation, allows Chapter 1 services to follow Chapter 1 students who are assigned to a non-Chapter 1 school. None of the districts in our sample was involved in reassigning students to schools in the middle of the school year. The option was not being used by any of the 30 districts.

### Summary

The simulation indicates that the four strategies that we examined for selecting Chapter 1 participants appear equally effective for identifying those students who are most educationally deprived. This finding does not suggest that any change in student targeting regulations to make student selection strategies uniform across districts would result in improved targeting outcomes. It may, on the other hand, indicate that districts that expend substantial time and effort implementing elaborate student rating schemes and complex weighted composite scores can use simpler procedures without jeopardizing the selection process.

Neither the comparable services option nor the transferred participant option appears to be creating problems for student targeting. In our sample these options are little used.

## Are There Higher Achieving Students Participating in Chapter 1?

### Overview

The presence in the program of students who are higher achievers (i.e., score above the 50th percentile or score above their district's cutoff score for program eligibility) has been an issue of concern to policy makers. In grades 2 through 6 nationally, an estimated 6.9% of the students in Title I schools who scored above the national median were in Title I in 1976 (Breglio, et al., 1978). This group made up 8.3% of the Title I students. Such students are also found among the Chapter 1 elementary school participants in our 30-district sample.

We find that the higher achievers in Chapter 1 elementary schools in our sample generally score just above their district's cutoff score for eligibility. We show that their presence in the program results from at least four factors. The first is the unreliability of selection instruments, on which students do not obtain the same score on two consecutive testings or ratings. Errors in measuring student achievement levels cannot be completely eliminated given the unreliability of tests, rating scales, teacher judgments, and any other factors available for assessing student performance. The farther a student's score is from the cutoff for eligibility the less chance of an error in making a decision about a student's program assignment. However, the inability to discriminate accurately between the educational need of those students scoring just below and just above the cutting point creates a problem for selecting the appropriate students.

Second, the use of teacher judgments or other factors (e.g., basal reading level, grade point average, etc.) to override assignment to the program based on the selection score alone contributes to the presence of higher achievers even when the judgments are a more valid indicator of need for the program. In some student selection strategies, these other factors are considered with the test scores as part of a composite score; in others, they are used in sequential order. Some students who have higher test scores enter the program because their scores on the other measures are low.

A third factor that contributes to the presence of higher achieving students is what appears to be a misunderstanding in our sample about the use of the "formerly eligible" student option. In our 30-district sample, some of the students who are no longer educationally deprived (according to their own district's definition), may continue to participate in the program. According to the legislative framework, however, the "formerly eligible" student selection option applies only to those students who are still educationally deprived but no longer among those in greatest need. In our sample, nearly 35% of the higher achievers who participate in Chapter 1 are former Chapter 1 participants.

Finally, in a later section, we find that districts in our sample whose average achievement levels are above the national average are likely to have higher achievers as a greater proportion of their Chapter 1 students. In these districts, a mismatch between the number of students who can be served by the Chapter 1 program and the low number of educationally deprived students in the Chapter 1 schools results in higher achievers participating in Chapter 1.

## How many higher achieving elementary-level students are participating in Chapter 1 reading programs in our sample?

Standardized definition of educationally deprived. Across the 30 districts, we find that 5.8% of the students in Chapter 1 schools who scored above the 50th percentile participate in Chapter 1. Students scoring above the 50th percentile represent 10% of the Chapter 1 participants in our sample, ranging across districts from a low of 0 to a high of 43%. (See Table A-10 in Appendix A.)

Locally determined definition of educationally deprived. Approximately 16% of Chapter 1 reading students in Chapter 1 elementary schools in our sample scored above their district's criterion for eligibility. On the average, the number of higher achieving Chapter 1 participants in our sample is equivalent to two children per grade level per Chapter 1 school. Table 30 presents the percentage of higher achieving Chapter 1 students for each district in the sample grouped by district achievement score. These percentages of higher achieving Chapter 1 elementary reading participants in our sample districts range from 0 to 92%. Regardless of whether a uniform criterion or local criteria are used to estimate the percentage of children in Chapter 1 who are not educationally deprived, both estimates indicate the presence of such higher achievers in the program.

Table 30

Number and Percent of Chapter 1 Elementary Students in Our Sample Who Are Higher Achievers

| District Achievement Level | District Code | Chapter 1 Enrollment | Chapter 1 Students Who Are Higher Achievers | |
|---|---|---|---|---|
| | | | # | % |
| Low (46-47 NCEs) | | | | |
| | J2 | 77 | 9 | 11.7 |
| | O2 | 205 | 0 | 0.0 |
| | S2 | 2,332 | 556 | 23.8 |
| | L1 | 781 | 6 | 0.8 |
| | O1 | 1,970 | 81 | 4.1 |
| | H2 | 56 | 16 | 28.6 |
| Medium (48-52 NCEs) | | | | |
| | M2 | 217 | 0 | 0.0 |
| | R1 | 648 | 144 | 22.2 |
| | C1 | 1,318 | 194 | 14.7 |
| | M1 | 920 | 132 | 14.3 |
| | S1 | 5,699 | 252 | 4.4 |
| | E1 | 37 | 0 | 0.0 |
| | G1 | 404 | 151 | 37.4 |
| | C4 | 459 | 24 | 5.2 |
| | H1* | 162 | 53 | 32.7 |
| | D2 | 6,218 | 2,426 | 39.0 |
| | S3 | 958 | 107 | 11.2 |
| High (53-56 NCEs) | | | | |
| | P2 | 1,160 | 380 | 32.8 |
| | B2 | 54 | 14 | 25.9 |
| | D1 | 7,474 | 568 | 7.6 |
| | S5 | 208 | 39 | 18.8 |
| | L2 | 634 | 33 | 5.2 |
| | C5 | 82 | 46 | 56.1 |
| Very High (57-66 NCEs) | | | | |
| | P1 | 58 | 2 | 3.4 |
| | B1 | 390 | 65 | 16.7 |
| | S4 | 53 | 23 | 43.4 |
| | J1 | 7 | 2 | 28.6 |
| | C2 | 44 | 16 | 36.4 |
| | S6 | 123 | 2 | 1.6 |
| | M3 | 12 | 11 | 91.7 |

_Note_. Higher achievers are students who score above their district's cutoff score for Chapter 1 eligibility.

*Since H1 is a high school district, the high school scores were analyzed.

## Who among the higher achievers participates in Chapter 1?

Based on data from districts that use test score or test score plus teacher judgment selection methods, we find that 45% of the Chapter 1 students who score above their district's cutoff score fall within 5 NCEs of the cutoff score, as shown in Table A-11 in Appendix A. (For districts using composite scores for selection, the test scores of higher achievers who are served are quite evenly distributed.) Typically, the distributions show larger numbers of students scoring near the cutoff and the frequencies decreasing in a long tail as scores become higher. In Table 31, data from district C1 provide an example of the frequency distribution of the scores of Chapter 1 participants who are above their district's cutoff. Thus, as with unserved eligible students, most higher achieving students participating in Chapter 1 obtain scores very close to their district's cutoff score.

Table 31

Frequency Distribution of Scores of Chapter 1 Students
Who Score Above the District Cutoff in District C1

| NCE Reading Score | Number Receiving the Score |
|---|---|
| 43 | 20 |
| 44 | 31 |
| 45 | 30 |
| 46 | 17 |
| 47 | 20 |
| 49 | 10 |
| 50 | 9 |
| 51 | 14 |
| 52 | 10 |
| 53 | 4 |
| 54 | 5 |
| 55 | 3 |
| 56 | 3 |
| 57 | 9 |
| 60 | 1 |
| 61 | 5 |
| 66 | 1 |
| 69 | 1 |
| 79 | 1 |

### What accounts for the presence of higher achievers among Chapter 1 participants?

*Unreliability of selection instruments*. No matter how strictly a district may attempt to exclude students scoring above a certain cutoff point from Chapter 1, when students are retested or are rated, some of them will always obtain scores above the cutoff. The change in a student's score stems from the unreliability of the selection instruments. If tests or grades or ratings were perfectly reliable, students would achieve the same number a second time as on the first, assuming no intervening treatment.

Unfortunately, measures of educational need are never perfectly reliable. It is always the case that when subgroups of students are selected for the Chapter 1 program on the basis of scoring below some selection criterion, upon reassessment, their mean score will be closer to the average score of the group from which they were selected than it was on the initial assessment. Stated another way, students selected because they had low scores will tend to score higher on a retest. This phenomenon is purely statistical and has nothing to do with anything that may have happened to the students between the two test administrations.

The simulations conducted using data from district S2 provide an illustration of the effect of test unreliability. When a strict 30th percentile cutoff on the first test was used to select Chapter 1 students, 21% of these students scored above the cutoff on the second testing, and 6% scored not only above the cutoff, but above the 50th percentile.

The unreliability of tests and all other types of available measures will always result in *some* apparently ineligible students being served. The proportion of served students who score above the 50th percentile will be higher for less reliable instruments. Since tests used for younger children are generally less reliable than those used for older children, the problem of apparently ineligible students being served will be more prevalent at the early grade levels.

Professional judgments and other non-test score factors. Even in the districts in our sample where the district policy is to assign students to Chapter 1 based solely on test performance, teachers and other education staff exercise their professional judgment and overrule program assignments determined by test score alone. This practice is not an undesirable one, especially when it enables teachers and other professionals who detect invalid scores to remove students with spuriously low scores from the selected group and to include students with spuriously high scores who have been omitted.

We found three general methods of employing additional measures of educational need. The first, and most quantifiable, is the use of uniform rating or ranking procedures in which teachers' assessments of their students' educational need are recorded using the same standards and criteria for all students. The structure and format of these rating scales vary from district to district, and they may be mathematically combined with test score data or used simply as an additional consideration in determining which students will participate in the Chapter 1 program. In two of the districts in our sample that had a standardized districtwide method for teachers to rate students, the correlations between the test scores and teacher ratings of the students were around .7, indicating a strong relationship between the two measures.

The second method involves the systematic consideration of a limited set of additional indicators to refine or validate the test score results. While these seldom result in a single quantified rating, they are systematic in that the same set of indicators is considered for each student.

The third method is one in which information other than a test score is brought to bear on student targeting, but is idiosyncratic to the particular student under consideration. This occurs most often when a teacher believes that a student's test score is not an accurate assessment of his/her educational need. This can and does occur in both directions. That is, teachers can recommend that a student who is not considered educationally deprived be admitted to the Chapter 1 program; or that a student who is considered educationally deprived not be admitted to the Chapter 1 program. In some districts, a teacher's recommendation is sufficient to effect this change. In others, some form of objective evidence is required. In either case, the procedures and measures are not the same for all students.

District C2, a large suburban district in our sample, illustrates the use of idiosyncratic teacher judgments. Students scoring below the 40th percentile on a standardized test are considered eligible for Chapter 1. In one of the elementary schools in C2, there are 26 students in the Chapter 1 program. Of these, eight scored above the 40th percentile on the selection test. Student identification codes and actual test scores of these students are contained in Table 32, along with the reasons for the selection decisions given by the Chapter 1 teacher in that school. The reasons reflect the variety of types of information taken into consideration in deciding to place a higher achiever in Chapter 1.

Of the eight students who were in the program but were not initially considered educationally deprived, the most common reason was a lack of confidence in the selection test results. In each case, retesting with another standardized test confirmed that these students were far more educationally deprived than was indicated by the results of the first testing. Two of the students were described as "in transition" from special education to the regular classroom. Both had been diagnosed as learning disabled while in special education and were believed to need another year of special instruction before returning to the

## Table 32

## Examples of Teacher Judgments That Formed the Basis for Placing Higher Achievers in Chapter 1 in One School in Our Sample

| Student Code | Percentile Score | Teacher Judgments |
|---|---|---|
| 111 | 51 | Overachiever, very motivated. Recently left Special Education, diagnosed as learning disabled. |
| 112 | 67 | Wide discrepancy between Vocabulary (75%ile) and Comprehension (20%ile). Needs help with Comprehension. |
| 113 | 48 | Had been in Special Education as learning disabled student. In Chapter 1 for only a few months. |
| 114 | 78 | Score is way too high--cheating. Retested at 3%ile under monitored conditions. |
| 115 | 48 | Slow learner. Retested at 22%ile Vocabulary and 14%ile Comprehension. |
| 116 | 48 | Data error. Is not in Chapter 1. Does excellent classroom work, highly motivated. |
| 117 | 42 | Absent a lot, slow in class. Retested at 12th %ile Vocabulary and 12th %ile Comprehension. |
| 118 | 53 | Special request for Chapter 1 assistance with writing and spelling. Classwork totally illegible. |

regular classroom. Of the remaining three students, one was simply a coding error on the data base--this student was not a Chapter 1 participant; another was referred by a classroom teacher for special help in spelling and handwriting because he could not produce any written work that was legible; the last scored well below the cutoff in reading comprehension (20th percentile) but very high in vocabulary (70th percentile), resulting in a total reading score which slightly exceeded the cutoff. Because the Chapter 1 reading program in district C2 emphasizes comprehension, the teacher recommended him for Chapter 1 service despite the high score on the vocabulary subtest.

## Summary

The two primary reasons for the presence of apparent higher achievers in Chapter 1 elementary school reading programs in our sample are the unreliability of selection measures and the use of professional judgments and other non-test factors in student selection. The mean of a group of students selected because of low test scores will tend to be slightly higher if they are retested, thus accounting for some higher achieving students qualifying for the program. Ratings of students by teachers have a high but imperfect correlation with test scores. Therefore, teachers invariably will want to exclude some students with low scores that they perceive as not needing extra help, and include students with higher scores who are perceived as needing help. In later sections of this chapter we demonstrate that two other factors, the formerly eligible option and the participation by some districts with low concentrations of educationally deprived students, also contribute to the presence of higher achievers in Chapter 1.

## Do Student Selection Options Contribute to the Presence of Higher Achievers in Chapter 1?

Only two of the four student selection options could contribute directly to the presence of higher achievers in the program: the formerly eligible option and the schoolwide project option. (The other two student selection options were discussed earlier in terms of contributing to educationally deprived students being missed by Chapter 1.) A misunderstanding of the formerly eligible option by many districts in the sample contributes to higher achievers participating in Chapter 1. Over one-third of the higher achievers in Chapter 1 were Chapter 1 participants the previous year.

The schoolwide project option potentially could contribute to the presence of higher achievers in the program. However, the option was used by only one school in the 30-district sample and thus did not account for higher achievers among the Chapter 1 students in our sample.

## The Formerly Eligible Option

The formerly eligible option allows students who were in greatest need in any previous year to continue to be served as long as they continue to be educationally deprived. This option allows districts to maintain service to former Chapter 1 students whose achievement has improved. However, the option requires that such students must still be educationally deprived.

Most district Chapter 1 staff in our sample tend not to use this option in the way prescribed by the legislation. Students to whom the option is applied are typically students who score above their district's eligibility criterion and were in Chapter 1 the previous year.

Twenty-three districts provided information on which students participated in Chapter 1 the previous year as well as which students participate in the current year. Of those Chapter 1 elementary students who score above their district's cutoff, about 35% of them had been Chapter 1 participants the previous year and presumably qualified for the program during that year.

Applying the formerly eligible option to students in this fashion is analogous to the formerly eligible school selection option in which former Chapter 1 schools whose poverty levels fall below their district's average may continue to receive Chapter 1 funds. The intent of the school selection option is to provide continuity of service in schools that would be otherwise ineligible because of minor or temporary fluctuations in the poverty level in the attendance area's population. Similarly, Chapter 1 personnel in our sample described the "formerly eligible" student option as allowing them to provide a continuity of educational programs to students who would be otherwise ineligible because of minor fluctuations in their achievement scores, given that nearly half (45%) of the higher achieving Chapter 1 students score within 5 NCEs of their district's cutoff score. This misapplication of the formerly eligible option may account for nearly 35% of the higher achievers who participated in elementary level Chapter 1 reading programs in our sample.

### Schoolwide Project Option

In our sample the schoolwide project option is not contributing significantly to the presence of higher achieving students in Chapter 1. In schools in which 75% or more of the children are from low-income families, all the students in the school may receive Chapter 1 program services if the district conforms to certain other legal requirements. In our 30-district sample, 85 schools in 11 of the districts have poverty levels of 75% or higher. Only one of these schools has a schoolwide Chapter 1 project. It is a rural school with a poverty level of 81% in which the average achievement level schoolwide is 38 NCEs (or the 28th percentile).

Nationwide few of the relatively small number of schools that qualify for the schoolwide project option use it. A survey conducted by NCES in 1979 (National Center for Education Statistics, 1979) found that only 5% of the districts that participated in Title I had schools that could qualify for the schoolwide option. Only 25 schools had or expected to have a schoolwide project during the 1979-80 school year.

In simulations presented below, we show that the within-district effect of introducing schoolwide projects is likely to be more pronounced in a small district than in a large district. Within districts, the overall effect of greater use of the schoolwide project option on the characteristics of Chapter 1 participants would depend on what types of schools and students currently in Chapter 1 would no longer be served and what types of new students would become Chapter 1 students because they are in the schoolwide project schools. Nationally, greater use of the option is not likely to change the characteristics of program students because too few Chapter 1 schools are affected to make an impact on national statistics.

Schoolwide projects in a large district. We conducted a simulation of the schoolwide project option using data from one of the largest districts in our sample. The district has 95 elementary schools, 11 of which have poverty levels of 75% or higher. We compared the poverty level and achievement distribution of current Chapter 1 students with those that would be selected for Chapter 1 if the schoolwide option was used. We examined three different school/student selection strategies in which the schoolwide option is used. Under strategy one, the students in the 11 schools that qualify for a schoolwide project were simply added to the present Chapter 1 program, thereby increasing the total number of participants from 7,580 to 9,280 students.

Under a second strategy, starting with the current Chapter 1 school ranked lowest in poverty and moving upward, we deleted Chapter 1 schools until the total number of Chapter 1 students that remained matched as closely as possible the number presently served by the district. This resulted in 27 schools being dropped from the Chapter 1 program with a total of 7,631 students being served.

The third strategy retained all the currently served schools and eliminated the 1,700 highest scoring current Chapter 1 students in non-schoolwide project schools so as to keep the total number of Chapter 1 students equal to the number currently served. Results of these simulations are shown in Table 33.

Table 33

Characteristics of Current Chapter 1 Students Compared to Simulations of Three Strategies for Adding Schoolwide Projects

| Chapter 1 Student Characteristics | Current Program | Schoolwide Projects Added: No Other Changes | Lowest Poverty Schools Deleted | Highest Achieving Students Deleted |
|---|---|---|---|---|
| Total # Students | 7,580 | 9,280 | 7,631 | 7,580 |
| Total # Schools | 90 | 90 | 63 | 90 |
| Percent Poor | 65% | 67% | 71% | 70% |
| Mean Reading Score (Percentile) | 27 | 32 | 32 | 28 |

Note. Simulations are based on data from one large district.

All three patterns of introducing schoolwide projects into this district would result in higher poverty levels among the participants, ranging from a slight increase of 2 percentage points when students in schoolwide projects are simply added to the present Chapter 1 population to an increase of 5 or 6 percentage points in the other configurations.

With the addition of schoolwide projects, the average achievement level of selected students remains relatively low. It increases slightly from the current 27th percentile to the 28th percentile when the highest achieving students are deleted, and reaches the 32nd percentile in the other two strategies.

The big difference in achievement between the current Chapter 1 population and those in the simulations is in the distribution of the reading scores, as can be seen in Table 34. Currently only 50 students out of the 7,580 in the Chapter 1 program score above the 50th percentile. Under each of the three simulations the proportion of participants who would be scoring above the 50th percentile increases from 1% to about 13%. Nearly 1,054 of the 1,700 students who would enter Chapter 1 by virtue of attending a school that qualifies for a schoolwide project score above the 50th percentile.

Table 34

Distributions of Reading Achievement Scores Comparing Current Chapter 1 Students With Three Strategies for Adding Schoolwide Projects

| | | | Schoolwide Projects Added: | | | | | |
|---|---|---|---|---|---|---|---|---|
| Percentile Score Ranges | Current Program | | No Other Changes | | Lowest Poverty Schools Deleted | | Highest Achieving Students Deleted | |
| | N | % | N | % | N | % | N | % |
| ≤ 25th %ile | 3,033 | 40 | 3,210 | 34 | 2,647 | 35 | 3,210 | 42 |
| > 25 and ≤ 50 | 4,497 | 59 | 4,966 | 53 | 3,891 | 51 | 3,314 | 44 |
| > 50th %ile | 50 | 1 | 1,104 | 12 | 1,093 | 14 | 1,057 | 14 |
| Total: | 7,580 | 100 | 9,280 | 99 | 7,631 | 100 | 7,581 | 100 |

_Note_. Figures are based on data from the same large district used in Table 33.

A similar simulation done with data from a district that has more Chapter 1 students scoring above the 50th percentile might show little change in the distribution of achievement scores. In such a case the number of current Chapter 1 students above the 50th percentile could be deleted to counterbalance the addition of those students with similar high scores attending schools with schoolwide projects.

_Schoolwide projects in a small district_. In a small district, the additional students that would enter a Chapter 1 program if a schoolwide project option were used could have much bigger effect on the average reading score of the Chapter 1 students in that district. For instance, in a small district in our sample, all the schools are Chapter 1 schools and 4 out of 5 of them qualify for the schoolwide project option. If the option were exercised, the average achievement level of Chapter 1 elementary students in this district would approach that of the districtwide average. For this district, when schoolwide projects are adopted, the mean achievement score would increase from 40 NCEs for present Chapter 1 students to 46 NCEs, the district average for elementary students. The poverty level among Chapter 1 students would remain at its current level of 97%.

A simulation of the option in a large district and in a small district illustrates that use of the option can produce more of a change in the characteristics of Chapter 1 participants in a small district than in a large district. A small district is limited in its ability to offset the characteristics of the students added by schoolwide projects by changing other school or student selection practices. The average achievement level of Chapter 1 students would be likely to increase when small, poor districts use the option. In large districts, however, the average achievement level of the participants could change very little, even though more higher achievers from schoolwide projects became Chapter 1 participants. The use of the option can increase the poverty level of Chapter 1 participants in large districts depending on the proportion of its schools that could qualify for schoolwide projects.

## Summary

Theoretically, the option that could contribute the most to the number of higher achievers in Chapter 1 is the schoolwide project option, which results in all students being served in a school that has a poverty level above 75%. In the study sample, only one out of 85 eligible schools elected to use this option. Because of limited use and the high correlation between school poverty and achievement both in our sample and nationally, the existence of this option does not appear to account for many of the higher achievers in Chapter 1. Within a district, the effect of an increase in the use of the option would depend on what other school and student selection practices were changed (if any) to counteract the introduction of the additional students from schoolwide projects. Widespread use of the option nationally is unlikely to increase the average achievement level or the poverty rate of participants because there are so few schools in the nation that can qualify for the option.

If the formerly eligible option were applied correctly in our sample districts, it would not contribute to the presence of higher achievers in Chapter 1 at these sites. Districts that misunderstand the law and assume that the option operates the same way as the school selection option include some students whose test scores were, but are no longer below the cutoff for Chapter 1 eligibility. According to test score criterion alone, these higher achievers should not be in Chapter 1. It is probable that the effect of strict adherence to the law would be small, however, because the test scores of most higher achievers who participated in Chapter 1 the previous year are close to the cutoff. Thus, teacher judgment about these students might result in some of these apparent higher achievers continuing to participate in Chapter 1.

## Are There Particular Types of Schools or Districts in Our Sample That Are Serving Higher Achievers, Skipping Lower Achievers, or Both?

### Overview

In our sample, we found no relationship between the number of educationally deprived students not participating in any categorical program in a Chapter 1 elementary school and the achievement level or poverty level of that school. At the district level, neither district achievement nor district poverty is related to the number of unserved educationally deprived students in Chapter 1 elementary schools.

The achievement or poverty level of schools within districts in our sample also is not related to higher achievers participating in Chapter 1. However, by examining Chapter 1 schools across the districts in our sample we find that for schools having similar mean achievement scores, the schools that are less poor are more apt to have a greater proportion of higher achievers in their Chapter 1 programs. In addition, at the district level, districts in our sample with high average achievement scores contain greater proportions of higher achievers in their Chapter 1 programs than other types of districts. In our sample, we show how the presence of high achieving districts contributes to higher achievers being served by Chapter 1.

Within the districts in our sample, there is no relationship between the number of unserved educationally deprived students in a Chapter 1 elementary school and the number of higher achieving Chapter 1 students in the school. We found no pattern within districts of schools skipping students who scored below their district's cutoff score for eligibility and instead serving students who scored above the cutoff. However, there are districts relative to others in the sample that have (a) high proportions of educationally deprived students not served by any program and (b) high proportions of higher achieving students in Chapter 1. These districts do not have a uniform student selection policy, or the policy that exists is not implemented uniformly across schools. District urbanicity, size, student selection method, and poverty are unrelated to these apparent inequities in student selection.

### Are there particular types of Chapter 1 schools or districts that have more unserved educationally deprived students than others?

Chapter 1 schools. Within the 10 districts in the sample having 10 or more Chapter 1 elementary schools, we found that the number of educationally deprived students who are not served by any type of categorical program (e.g., Chapter 1, special education, state compensatory education) is unrelated to school poverty or school achievement.

Multiple correlations were calculated using school enrollment, the average achievement level of the school, and the percent poor in the school (as measured by participation in the National Lunch Program) to predict the number of educationally deprived students who are unserved by any program. The multiple correlations ranged from .22 to .87, and across the 10 districts they averaged .58. For most districts in this subsample, there was no relationship among school achievement and school poverty and the number of educationally deprived in the school not served by any program.

Districts. In our sample, the average achievement score of a district and the poverty level of a district are unrelated to the percentage of educationally deprived students not being served. The correlation between district achievement and percentage of educationally deprived who are not served is -.14. The correlation between district poverty and percentage unserved is -.09, indicating no relationship between these two factors.

## Are there particular types of Chapter 1 schools or districts that have more higher achievers in their Chapter 1 program?

Chapter 1 schools. Within districts in our sample, neither the poverty level or achievement level of a school is related to the number of higher achievers participating in Chapter 1. Across districts, for schools of similar achievement levels, the poverty level of schools in our sample is related to the number of higher achievers in the Chapter 1 programs of the schools. Given two schools having similar achievement levels, the one that is less poor is more likely to have a greater percentage of higher achieving Chapter 1 participants.

Districts. Across the 30 districts, a moderate positive relationship (correlation of .48) was found between districtwide achievement and the proportion of Chapter 1 participants who are higher achieving. District poverty was weakly related to participation rates by higher achievers (correlation of -.26).

Two districts in our sample with high achieving populations illustrate how high achievers have entered their Chapter 1 programs. District M3 has a high achieving student population in which the average achievement districtwide is 66 NCEs. The cutoff score for Chapter 1 program eligibility is set at an NCE of 50 (or the 50th percentile), and of the 108 students in kindergarten through grade 4, there are six who score below the 50th percentile. Of these six, one participates in Chapter 1 and the other five are served by special education. Chapter 1 serves a total of 12 students at these same grade levels. The program includes the one non-special education student scoring below the national average and 11 more who score above it.

A similar situation is found in district S4, a large suburban district with a high achieving population. All 30 students who attend the one elementary school targeted for Chapter 1 and who score below the 50th percentile are participating in the program. Chapter 1 serves 23 additional students, all of whom score above the 50th percentile.

Districts such as these wish to operate programs that meet local standards of size, scope, and quality. The average performance of students in the district is well above the national average. To fill the slots available in the Chapter 1 program, the districts must seek students who are above the 50th percentile.

In large districts with high achieving students, there is the possibility school selection practices might be changed to decrease the proportion of higher achieving Chapter 1 participants. For instance, in district S4, by including more of the Chapter 1-eligible schools in the program and serving fewer students in each of the schools, a lower scoring group could have been selected for Chapter 1. (Appendix E presents a simulation showing how the average achievement level of selected students increases as the proportion of students selected in a school increases.)

### Are there particular types of schools or districts that serve higher achievers and skip lower achievers?

Chapter 1 schools. Chapter 1 schools in our sample are not skipping lower scoring students and serving higher scoring students in their place. These are independent events. Schools that are unable to provide some type of categorical education program to all their educationally deprived students are different schools from those that serve students who are higher achieving.

Within districts, almost no relationship was found between a school serving higher achieving students and not serving lower achieving ones with some type of program. For the 10 districts with large numbers of schools for which we have complete program participation data, the absolute value of the school level correlations averaged .07, ranging from .03 to .58.

Districts. Districts that serve higher achievers and skip lower achievers are ones in which (a) the criteria for being selected for Chapter 1 vary from school to school or (b) schools do not follow district policy. The distribution of the districts in our sample according to the proportion of educationally deprived students served by some program and the proportion of higher achievers participating in Chapter 1 is presented in Table 35. Seven of the districts have both a low percentage of their educationally deprived students receiving some type of program service and a high percentage of higher achievers in Chapter 1 relative to the other districts in the sample. These are the districts counted in the bottom right corner.

Table 35

Districts In Our Sample Distributed by Percent Higher Achievers in Chapter 1 and Percent Educationally Deprived Served by Some Type of Program

| Percent of Educationally Deprived Served by Some Program | Percent of Higher Achievers in Chapter 1<br>Low<br>< 10% | <br>Moderate<br>10-20% | <br>High<br>> 20% |
|---|---|---|---|
| High | | | |
| > 95% | 3 | 1 | 2 |
| > 80 to 95% | 4 | 1 | 2 |
| Moderate | | | |
| > 70 to 80% | 3 | | 2 |
| Low | | | |
| 60 to 70% | 1 | 1 | 4 |
| < 60% | | | 3 |

Note. Three districts are not included because they had no data for special education participation.

The seven districts with student selection discrepancies noted in the bottom right hand corner of Table 35 represent a diverse group, as is apparent from the information in Table 36. All but one district of the seven has an achievement level above 50 NCEs; however, they do not share the same urbanicity, enrollment size, poverty level, or method of selecting Chapter 1 students.

Table 36

Characteristics of the Districts in the Sample That Served Higher Achievers and Skipped Educationally Deprived Students

| | Elementary Students | | | | |
|---|---|---|---|---|---|
| Size/ Urbanicity | Percent Poor | Average Reading Score (NCEs) | Student Selection Model | % Educationally Deprived in Chapter 1 | % of Chapter 1 Students Who Are Higher Achieving |
| Large Urban | 26 | 53 | Test score | 46 | 33 |
| Large Suburban | 3 | 63 | Test score with teacher judgment | 28 | 37 |
| Medium Rural | 23 | 56 | Test score with teacher judgment | 17 | 56 |
| Medium Rural | 23 | 55 | Test score with teacher judgment | 44 | 19 |
| Small Rural | 31 | 52 | Composite | 35 | 26 |
| Small Rural | 72 | 47 | Composite | 40 | 33 |

Based on discussions with staff in these districts both at the district and school level, a common philosophy that characterizes the majority of these seven districts is a reliance on unsystematic judgments in the schools to determine program placement. While other districts in the sample have also emphasized teacher judgments, six of these seven districts have not been prescriptive in defining uniform criteria for rating students across schools within the district. The seventh district has been highly prescriptive and has developed a complex method of weighting a variety of factors and combining them into a composite selection score. However, local school staff appear to disregard these composite scores in selecting students for the program.

For all seven districts, individual schools or even teachers within schools use independent criteria and different types of information to make judgments about placing students in Chapter 1. When, as in our analyses, characteristics of the actual Chapter 1 participants are compared with the characteristics of those who would have been selected if districtwide criteria were uniformly applied, discrepancies are found. In the case of these seven districts, Chapter 1 is serving smaller percentages of those students who score below their districtwide criterion for eligibility and larger percentages of those students who score above it. Differences among schools or among teachers within schools in the application of district policy governing student eligibility for Chapter 1, or the lack of a districtwide policy, produces these results.

## Chapter Summary

### Factors Influencing the Selection of Chapter 1 Students

One of the most important findings of this chapter is that while Chapter 1 is the program that serves the largest percentage of the educationally deprived (as defined by each district) in the Chapter 1 elementary schools in our sample, other categorical programs also provide services to this group. Slightly over 80% of the educationally deprived students in the Chapter 1 elementary schools in our sample participate in some type of categorical program. The chances of an educationally deprived student in a Chapter 1 elementary school participating in Chapter 1 are influenced by whether he qualifies for other categorical programs. In particular, many educationally deprived students in our sample who are in special education are not participating in Chapter 1, although as a group they are lower scoring than Chapter 1 students.

Another major finding is that, regardless of the selection method used, none of the districts in our sample adhered strictly to its own definition of educational deprivation or to its own cutoff score for Chapter 1 program eligibility. For students scoring within 5 NCEs of their district's cutoff score, professional judgment is often exercised in deciding who of this group will participate. This judgment frequently results in the exclusion from Chapter 1 of some students scoring just below the cutoff, and the inclusion of some students scoring just above the cutoff.

The student selection process sometimes results in apparent inequities when districts do not have uniform selection criteria for all their Chapter 1 schools to follow. The use of idiosyncratic teacher judgments produces situations in which a student's chances for participating in Chapter 1 vary from one Chapter 1 school to the next within a district.

Our sample of 30 districts reveals that student selection practices nationwide are likely to be influenced by the following:

- Many educationally deprived students in greatest need may not participate in Chapter 1 if they are participating in special education programs, bilingual/ESL programs, migrant programs, or state compensatory education programs.

- Other educationally deprived non-Chapter 1 students score near the cutoff for eligibility and do not participate because they are judged to be less in need than those who do participate.

- Higher achieving Chapter 1 students result from:

  (a) unreliability of the instruments (e.g., tests, rating scales, grades, etc.) used to measure educational deprivation;

(b) school-level determinations that such students have invalid scores and deserve to participate; and

(c) the presence of districts that do not have a sufficient number of educationally deprived students in their Chapter 1 schools to fill their Chapter 1 program. These districts with high achieving student populations fill the remaining available spaces with higher achievers.

We examined the four general strategies used to select students in our 30-district sample. Simulations showed that any of the four strategies can result in similar types of educationally deprived students being selected. The more elaborate and time consuming selection procedures do not seem to identify an educationally needier group of students than simpler methods.

## What is the impact of student selection options?

We also examined in this chapter the impact of the legislative framework on who receives and does not receive program services. The examination of the use of student selection options by districts in our sample showed in summary that:

- The formerly eligible option is often being incorrectly applied. Some higher achievers who no longer meet their district's eligibility criteria for educational deprivation are allowed to remain in Chapter 1 if they were in the program the previous year.

- The schoolwide project option is used in only one of the 85 high-poverty schools in the sample that qualifies for it. The average reading score in the school is 38 NCEs and use of this option did not contribute in any substantial way to the number of higher achievers in our sample participating in Chapter 1. Increased use of this option could increase the proportion of higher achievers in the program and increase the poverty concentration of participants, but might not change the average achievement score of Chapter 1 students. Actual changes in the characteristics of Chapter 1 students will depend on what students or schools are dropped from the program (if any) when the additional students in schoolwide projects are added.

- The comparable services option accounted for only 2% of the educationally deprived students in Chapter 1 elementary schools in the sample not participating in Chapter 1 so as to avoid duplication of services. While 13 of the 30 sample districts received funds for state compensatory education (SCE) programs, only three of them operate SCE programs at the same grades and schools as Chapter 1.

- The transferred participant option was not used by any of the sites in our sample since none was reassigning students to schools during the school year.

Strategies to consider in reducing discrepancies in student targeting include:

- A requirement that districts enforce uniform standards and methods for selecting Chapter 1 students across all schools in the district. When professional judgment is to be part of the decision process, all staff in a district need to base their judgments on a common set of criteria.

- Clarification of the formerly eligible student selection option to emphasize the fact that the option applies only to students who are still educationally deprived but are no longer necessarily among those in greatest need.

- Encouraging districts to develop comprehensive policies to address the issue of program assignment for those students who are eligible for services from more than one program.

- Encouraging those districts that currently have higher achieving Chapter 1 participants because they do not have large concentrations of educationally deprived students in their Chapter 1 schools to reconsider their school/student selection practices. In some instances by selecting more schools and fewer students per school the number of higher achievers in the Chapter 1 program can be reduced.

# V. OVERVIEW OF THE FINDINGS AND THEIR POLICY IMPLICATIONS

## Overview of the Purpose of the Study

Using a case study approach, this study examined the dynamics and outcomes of the Chapter 1 program's school and student selection procedures. Its central focus was to explain why the characteristics of schools and students selected for program participation vary across districts. The study addressed such questions as: Why are some schools with very low poverty concentrations receiving program services while other schools with very high poverty concentrations are not? Why do some students who are relatively high achievers obtain program services when many very low achieving students do not? How do districts use the various school and student selection options contained in the program's legal framework? How are Chapter 1's school and student selection decisions affected by the presence or absence of other programs with goals or target populations which overlap with Chapter 1?

Previous studies of the Title I/Chapter 1 school and student selection process provided descriptive information about the characteristics of Chapter 1 participants nationally and about the frequency with which selection options were used. These studies also supplied estimates of the numbers of low achieving students who were not Title I/Chapter 1 recipients and of the number of higher achieving students who were participating. Unfortunately researchers had limited information about why the patterns they found were occurring.

To understand better the dynamics and outcomes of the program's targeting processes, we linked two types of data in 30 purposively-selected districts which represent a range in district size, urbanicity, poverty, and achievement levels. First, we collected detailed information about each district's Chapter 1 school and student selection practices. Second, this information was coupled with each district's existing student-level data about many important characteristics of both Chapter 1 and non-Chapter 1 students. Among others, these characteristics included each student's achievement scores, poverty status, grade level, school attended, and participation in various categorical programs. This case study design, then, provided for the first time the necessary data to analyze how particular selection practices and local district characteristics are related to the types of schools and students served by Chapter 1.

While this case study design cannot provide national estimates, it offers at least two important sets of insights for policy makers interested in understanding and improving the program's targeting. First, it can illuminate how characteristics of the districts and schools which receive Chapter 1 services (i.e., size, percent of students from low-income families, average student achievement, etc.) interact with certain school and student selection strategies to produce the population of schools and students currently served in the program. Second, through simulations it can illuminate the results of modifying or eliminating certain school and student selection requirements and options.

Many of our data collection efforts and analyses have focused on disentangling the targeting effects related to school selection from those related to student selection decisions. Within-district analyses generally revealed that districts in our sample selected the highest poverty schools to participate and identified Chapter 1 participants from among the lowest achieving students in those schools. Discrepancies in Chapter 1 targeting, however, became apparent when a cross-district examination of the results of the selection process was undertaken. For instance, across districts some schools with low poverty rates are eligible for Chapter 1 while other schools with much higher poverty rates are not eligible.

## Summary of the Findings

### What schools and students participate in Chapter 1 in our sample?

In general, the legal framework specifies that the schools to be selected for Chapter 1 should be those with the highest concentrations of students from low-income families. Indeed, within each district in our sample the Chapter 1 schools have higher poverty rates than the non-Chapter 1 schools. The legal framework also directs districts to provide Chapter 1 services to students within the Chapter 1 schools who are among those in greatest educational need. Again, in the Chapter 1 schools in our sample, the Chapter 1 students are a lower achieving group than the non-Chapter 1 students. More specifically, in our 30 districts the Chapter 1 schools and students exhibit the following characteristics:

Chapter 1 Schools

- Chapter 1 schools in our sample have higher concentrations of poor students than non-Chapter 1 schools. In our sample 53% of the students in Chapter 1 schools are poor compared to 36% in non-Chapter 1 schools. The poverty levels of Chapter 1 schools in our sample range from 1% to 100%.

- The reading achievement level of students in Chapter 1 schools in our sample is lower than that of students in non-Chapter 1 schools at the same grade bands. In our sample the difference is 8 NCEs, with students in Chapter 1 schools having an average score of 50 NCEs (50th percentile) and students in non-Chapter 1 schools having an average score of 58 NCEs (65th percentile). The average achievement levels of students in Chapter 1 schools in our sample range from the 42nd percentile, well below the national average, to the 78th percentile, well above the national average.

- Chapter 1 schools in our sample have slightly higher proportions of limited-English-proficient students and special education students than do non-Chapter 1 schools at the same grade bands.

Chapter 1 Elementary Students

- Chapter 1 students, on the average, score nearly 1 standard deviation lower than non-Chapter 1 students in Chapter 1 schools. In our sample, the average achievement score of Chapter 1 students is at the 27th percentile (or 37 NCEs).

- About 71% of the Chapter 1 participants in our sample are poor compared to 53% of the students in Chapter 1 schools.

- In our sample, limited-English-proficient students participate in Chapter 1 in higher proportions than they exist in Chapter 1 schools (7% vs. 4%). Special education students participate in Chapter 1 in about the same proportion as they exist in Chapter 1 schools (11%).

### Why are some schools with very low poverty concentrations receiving program services while other schools with very high poverty concentrations are not?

Under the present legislative framework, 14% of the schools in the sample having poverty levels at or below 12% are eligible for Chapter 1. On the other hand, 30% of the schools in our sample with poverty levels above 20% are not eligible because their poverty levels are below their district's average. When the 25% rule is used, 7% of the schools with poverty over 20% are still ineligible. Looking at these discrepancies in another way, there are 67 schools in our sample with poverty levels below 20% that could legally qualify for Chapter 1 because they have poverty levels above their district's average, and at the same time there are 63 schools in our sample with poverty levels above 20% that could not legally qualify.

The following factors contribute to the presence of some low-poverty schools in Chapter 1 and the absence of some high poverty schools:

- Low-poverty Chapter 1 schools are often a direct result of the participation in the program of low-poverty districts. Low-poverty schools are eligible for Chapter 1 funds when they have poverty levels above their district's (low) average. Although Chapter 1 allocations to low-poverty districts are relatively small, they add up to about $400 million annually.

- High-poverty non-Chapter 1 schools result from schools being below their district's (high) poverty average and having slightly fewer than 25% low-income students. In some cases, they result from schools being in high-poverty districts which for reasons of stability or educational philosophy serve only their very neediest schools.

### Why do some students in Chapter 1 schools who are relatively high achievers obtain program services when many very low achieving students do not?

Fifty-two percent of the students in Chapter 1 elementary schools in our sample who score below the 50th percentile in reading do not participate in Chapter 1. Using districts' definitions of educational deprivation, 37% of the educationally deprived in our sample of Chapter 1 schools do not participate in Chapter 1. In contrast, about 16% of the Chapter 1 students in our sample score above their district's criterion for eligibility. Ten percent of the Chapter 1 participants in our sample score above the 50th percentile.

Some low-achieving students in our sample Chapter 1 schools do not participate in Chapter 1 for the following reasons:

- Of those students defined as educationally deprived by their districts, 18% receive special services from other programs such as special education, a bilingual/ESL program, a migrant program, or a state compensatory education program. Participation in other categorical programs decreases an educationally deprived student's chances of participating in Chapter 1, even though he/she may be among those in greatest need. For example, many of the most educationally deprived students in our sample participated in special education and not in Chapter 1.

- Nineteen percent of the students defined as educationally deprived by their districts do not participate in any categorical education program. These students tend to score just below their district's cutoff for Chapter 1 program eligibility and do not participate because they are judged less in need than those who do participate.

In our sample, higher achieving Chapter 1 students result from:

- the unreliability of the instruments (e.g., tests, rating scales, grades, etc.) used to measure educational deprivation;

- school-level determinations that such students have invalid scores and deserve to participate;

- districts that have more openings for students in the Chapter 1 program than they have educationally deprived students in their Chapter 1 schools. These types of districts typically contain students having an average reading achievement score well above the national average.

- compared to others in the sample, districts that have relatively higher proportions of unserved educationally deprived students and higher proportions of higher achieving Chapter 1 participants tend to lack uniform student selection standards. Methods for selecting students in these districts vary from school to school.

### Are there legislative options or exceptions that contribute to discrepancies in school or student selection?

- The uniformly high concentration of poverty option can be used by a district with all low-poverty schools, since the poverty range in such a district would be less than 10%. Under such circumstances, use of the option will contribute to the presence of low-poverty schools in Chapter 1.

- Both within our sample and nationally, districts' application of the grade band option has meant that Chapter 1 schools are more likely to be elementary schools. In our sample, 74% of the elementary schools, 49% of the middle schools, and 22% of the high schools receive Chapter 1 funds. The poverty rate in the high schools in our sample are lower than those of the junior high/middle schools. The elementary schools have the highest average poverty of the three. Hence, the current practices of targeting more schools at the lower grade levels does not necessarily mean that large numbers of high poverty schools are not being qualified for service.

- Most districts in our sample did not apply the formerly eligible student selection option in a way consistent with the legislative framework. Students who are no longer educationally deprived but who were in Chapter 1 the previous year are being retained in the program under this option. About 35% of the higher achieving Chapter 1 students were program participants the previous year.

## Policy Implications of the Findings

1. Reduce the participation in Chapter 1 by districts that have low average poverty and no high poverty schools.

The presence in Chapter 1 of low poverty districts contributes to the problem of low poverty schools receiving Chapter 1 funds. When a district's average poverty is low, schools with poverty levels just above the low average are eligible. For instance, in our sample, one district has a poverty rate of 2.5%. Schools in the district that have poverty rates of 2.8%, 3.1%, and 3.2% are eligible for Chapter 1.

2. Within districts with poverty levels above 25%, allow more high poverty schools to be eligible and encourage districts to serve them.

Under the present legal framework, there are some high poverty elementary schools that are not eligible for Chapter 1. They are located in high poverty districts in which the average poverty level is 25% or higher. In such districts, schools that have poverty levels above 20%, for example, but below 25%, are not eligible for Chapter 1.

Changes to the legal framework may need to do more than make additional high poverty schools eligible under options. If high poverty districts were assured of a stable increase in the amounts of their program funds, they might voluntarily use an option that makes eligible high poverty schools with poverty rates below the district average. In our sample some high poverty districts that could use the 25% rule to qualify more high poverty schools do not currently use the option. They resist using the option because of concerns about fluctuations in their annual program apportionment and a desire to maintain the intensity of services in the schools that are being served. Perhaps there should be a requirement for districts to serve such high poverty schools.

3. Modify the uniformly high concentration of poverty option and provide more technical assistance in its use.

We recommend that a condition be added to this option that allows only high poverty districts that also have a narrow range in school poverty to apply the option. Presently any district, including one with low poverty, can qualify all its schools if the range in poverty among its schools is sufficiently narrow. For example, any district in which all schools have poverty levels under 10% will have such a narrow range. Districts with uniformly low poverty should not be allowed to qualify all their schools.

Misunderstandings about the appropriate way to apply this option caused some districts in our sample to use it in a variety of ways, not all of which are in accordance with the legislation. For example, one district determines those schools that are eligible for Chapter 1 because their poverty is above the district average for the grade band. To qualify the remaining schools whose poverty falls below the average, it determines the poverty range for those schools only and then invokes the option. States and districts need to better understand how to correctly apply this option.

4. Require that districts enforce uniform standards and measures for selecting Chapter 1 students across all schools in the district.

The objective of this suggestion would be to ensure that an educationally deprived student has the same chance of being selected for Chapter 1 regardless of which Chapter 1 school he/she attends in any one district. We recommend acceptance of the practice of allowing professional judgments to determine the assignment of those who score near the cutoff on the selection test. This practice can add to the validity of the decision making (although it makes the program appear to serve higher achievers and skip lower achievers). When teacher judgments are made, however, all decision makers need to be considering a common set of criteria in making their determinations, rather than operating independently.

When a high proportion of Chapter 1 students in a district have selection scores above the district cutoff and a high proportion of those scoring below the cutoff are not receiving any type of special service, this is an indication that there are problems with the district's selection strategy. Extensive use of the practice of overriding program assignments that were determined by selection scores may be occurring because school staff do not believe in the validity of these scores. The process the district is using to select students then needs to be re-evaluated.

5. Encourage districts through technical assistance to have comprehensive policies addressing the issue of assigning to appropriate programs students who are eligible for more than one program.

In our sample, there are districts that have developed effective policies and procedures regarding those students who are eligible for special services from more than one program. Six of the 30 sample districts provide some type of special services to over 95% of the educationally deprived students in their Chapter 1 elementary schools. Some students in these districts participate in more than one special program. At the same time, these districts have spread the various special services that are available across their low achieving student population. The policies and practices related to multiple program eligibility in districts such as these would be useful ones to share with other districts.

6. Clarify how the formerly eligible student selection option is to be used.

The legislative framework specifies that the formerly eligible student selection option applies only to those students who are educationally deprived but are no longer necessarily among those in greatest need. Districts in our sample are not applying the formerly eligible student selection option in the way specified by the legislative framework, but they share a common misunderstanding of its use. The general practice is to retain some students in the Chapter 1 program even though they no longer score below the district cutoff for eligibility.

7. Encourage greater use of the schoolwide project option, if there is an interest in having districts with high poverty schools increase their flexibility in selecting students for Chapter 1.

Currently both in our sample and nationally, few districts that have schools with poverty levels qualifying them for the schoolwide project option are using it. Within large districts, while increased use of the option might increase the number of higher achievers participating, the average achievement level of Chapter 1 students would remain low. In addition, the proportion of poor students in a large district's Chapter 1 program is likely to increase by using the schoolwide project option.

Few schools in the country have poverty levels of 75% or higher. Even if all such schools adopted schoolwide projects, because they are so few in number, it is unlikely that it would raise the average achievement scores of Chapter 1 students nationally. Only within the districts that used the option would changes in the characteristics of the participants be detectable.

8. Encourage districts that have small concentrations of educationally deprived students in their Chapter 1 schools to reexamine their school and student selection practices.

In districts with high achieving student populations, sometimes the number of openings for students in their Chapter 1 program exceeds the number of educationally deprived students in their Chapter 1 schools. The openings that remain once the educationally deprived are included are then filled by higher achievers. For some districts in these circumstances, it would be possible to serve more of the schools that are eligible for Chapter 1 funds and serve fewer students per school. This would decrease the presence of higher achievers in their Chapter 1 program.

In small districts with high achieving student populations where all schools are currently Chapter 1 schools, this type of school targeting change would not be possible. When small districts with high achieving student populations have Chapter 1 programs, higher achievers are likely to be among the Chapter 1 participants.

9. Continue to permit districts to choose the grade bands (or school levels) to target.

All districts in our sample that contain elementary grade levels elect to operate Chapter 1 programs at the elementary level. Fewer districts operate programs at the upper grade levels. Nationally Chapter 1 students at the secondary level are lower achieving than those at the elementary level. It should not be inferred from these data, however, that by increasing services at the secondary level, Chapter 1 would reach a more educationally needier group of students. The low scores of the secondary students result from the fact that a much smaller proportion of the secondary school population is being served by Chapter 1 compared to that at the elementary school level. If the proportion of students served by Chapter 1 in our high schools approached that of the elementary level, it is likely that the achievement scores of the two groups would be similar. Furthermore, the lower poverty rates of high schools compared to elementary schools and the high dropout rates among poor, low achieving, and minority students at the secondary level are other factors that should be considered before making changes in the current distribution of services across grade levels.

## Conclusions

In general, our study of targeting practices used in the Chapter 1 program has demonstrated that the application of the same legislative framework by districts with very different characteristics will result in different types of Chapter 1 schools and students being eligible for the program. Discrepancies in school and student selection occur when Chapter 1 programs are placed in districts that contain mostly low-poverty schools or in districts that do not have concentrations of low-achieving students in their Chapter 1 schools. The presence of the first type of district in Chapter 1 introduces low-poverty schools while the second type of district can introduce higher-achieving students into the program.

The flexibility in targeting allowed under the legal framework is used by the districts in our sample and nationally to accommodate their local circumstances. Particularly the use of the 25% rule is important for making eligible for Chapter 1 funds some additional high-poverty schools in high poverty districts that would be otherwise ineligible.

Strategies currently used by districts to select students for Chapter 1 are adequate for identifying low-achieving students. A certain amount of inaccuracy in this process will always be present because of measurement error in the instruments available for quantifying achievement or educational need. The application of professional judgment to those students who score near the cutoff for eligibility is a practice that can be effective in counteracting measurement error. Even if the legal framework were to prohibit the use of teacher judgment to override program assignment based on selection score, compliance on this issue is likely to be limited and could be disadvantageous. In districts in our sample that have clear policies that assignment to the Chapter 1 program is to be made solely on the basis of the selection score, teacher judgments are still being exercised. There is no reason to believe that this practice should be discouraged.

Finally, while there are many low-achieving students in Chapter 1 schools who do not participate in Chapter 1, it appears that many of them do receive special services from other programs. The low-achieving students who do not participate in any categorical program are a higher achieving group compared to Chapter 1 students and generally score near the cutoff for Chapter 1 eligibility.

# VI. SPECIAL ISSUES

## Chapter Overview

In this chapter we discuss two additional topics related to Chapter 1 school/student selection in our sample--recent changes in selection practices and the selection of nonpublic school students. While our sample could not provide enough information on these topics to permit an exhaustive presentation, we were able to collect enough data to illustrate situations that exist in many districts throughout the country.

## Recent Changes in Chapter 1 School and Student Selection

### Overview

Since 1981, when ESEA Title I was replaced by ECIA Chapter 1, districts in our sample have made many changes in their school and student selection practices. In this chapter, we discuss these changes, and show that most of them were designed to minimize changes in the outcomes of these practices--the number of schools and students receiving Chapter 1 services. We show that, while many of our sample districts changed the grade levels and subject areas in which Chapter 1 programs were offered, they attempted to maintain the same schools participating in the program. We also show that, as in the national data on Chapter 1 program participation, the number of students served in Title I/Chapter 1 across our sample districts declined only slightly since 1981. Within these districts, however, there are instances of large increases and reductions in the number of students served over this time period.

Following a discussion of changes in school and student selection practices, we discuss the forces behind these changes in our sample districts. We show that the major force behind these changes has been changes in Chapter 1 allocations since the 1980-81 school year. All but six of our sample districts experienced reductions in these resources (after adjusting for inflation) over the five-year time period. Changes in the number of students served in the program were usually smaller than the changes in Chapter 1 allocations in our sample districts, however. By relying more heavily on teacher aides, or offering Chapter 1 assistance in fewer subject areas or in larger instructional groups, districts in our sample have provided services to Chapter 1 students at lower cost in 1985-86 than in 1980-81.

The flexibility in the legislative framework of Chapter 1 allowed our sample districts to change their school and student selection practices to achieve stability in program services. This flexibility was not viewed as a change from the Title I legislation, however. As noted above, the changes in Chapter 1 allocations were consistently cited by our sample districts as the primary impetus for change in their selection practices. The relationship of Chapter 1 with other compensatory education programs in the districts also played a role in these changes. As Chapter 1 funding fluctuated over this time period, state or local compensatory education resources were relied on more heavily to provide services to educationally deprived students.

Finally, in this chapter, we also discuss the impact of desegregation on school selection practices. Twelve of the 16 largest districts in our sample were under mandated desegregation, although nearly all of these desegregation efforts were initiated prior to 1981. As districts in our sample attempted to meet desegregation requirements, they revised school attendance areas, consolidated schools, and initiated magnet school programs.

### How have Chapter 1 school and student selection changed since 1981?

While overall stability in school and student selection outcomes is the general rule in our sample districts, there have been some changes in the numbers of schools and students selected for Chapter 1 services as well as in the grade levels and subject areas in which these services are provided. Some districts have also changed the methods by which they select either schools or students. In this section, we describe these changes in detail and show that they have usually been made to achieve an explicit, pre-determined goal for school or student participation in the Chapter 1 program.

Changes in the outcomes of school selection, in terms of grade levels, subject areas, and percent of schools selected within our sample districts are summarized in Table 37. To see the relative frequency of changes in these areas in our sample districts, each type of change is analyzed and presented separately. Consequently, districts in our sample that made more than one of these changes are represented more than once in Table 37. In each of these areas, the majority of the districts in our sample made no changes. Of the 16 changes in Chapter 1 grade levels in our sample districts, 10 were reductions in the grades at which Chapter 1 programs were offered. Changes in both subject matter and percent of schools targeted were relatively balanced across the districts in our sample. Nearly all subject area changes were in language arts. Within grade bands, seven reductions in the percent of schools selected and eight increases in the percent of schools selected have occurred in our sample districts. Most of these changes were in large districts in our sample, and they usually affected only one or two schools in these districts. A district-by-district list of these indicators in 1981 and 1986 is contained in Appendix F of this report.

Grade bands. Maintaining Chapter 1 services to elementary schools is a high priority in our sample districts. All K-12 districts in our sample offer Chapter 1 at the elementary level, and the three districts that reduced services to these grades after 1981 did so because a state compensatory education program was available to provide comparable services at these grades. Of the other eight reductions in grade levels, four dropped Chapter 1 programs in early childhood education or reading readiness for pre-K or kindergarten students; and four districts dropped their middle school or high school programs. As shown in Table

Table 37

Number of Districts in our Sample Making Changes in Selection Practices from 1980-81 to 1985-86

| Type of Change | Direction of Change | | |
|---|---|---|---|
| | Added | Reduced | No Change |
| Grade Bands | | | |
| Pre-K or K | 2 | 4 | 21 |
| Elementary | 1 | 3 | 23 |
| Middle | 1 | 2 | 25 |
| Senior High | 1 | 2 | 24 |
| Subject Area | | | |
| Reading | 0 | 0 | 25 |
| Math | 1 | 2 | 22 |
| Other language arts | 6 | 4 | 15 |
| Percent Schools Selected[a] | | | |
| Elementary Schools | 5 | 5 | 12 |
| Middle Schools | 2 | 1 | 12 |
| High Schools | 1 | 1 | 4 |

[a] Calculations include only those districts that selected schools within the grade bands indicated in both years, and that could supply us with the necessary data for both years. This includes 22 districts for elementary schools, 15 for middle schools, and six for senior high schools.

37, two districts added the middle or high school grade bands to their Chapter 1 program since 1981. Both of these districts did so at the insistence of their SEA in response to steadily increasing amounts of carryover funds in their Chapter 1 budget. These districts had been trying to provide a financial cushion for the large budget reductions they anticipated in the future.

Subject areas. Changes in Chapter 1 subject areas have usually not been in the basic skill areas of reading and math in our sample districts. Ten of the 13 changes in Chapter 1 subject matters in our sample districts were in language arts-related areas other than reading.

School selection. More than half of the districts in our sample served the same proportion of their schools in 1985-86 as they served in 1980-81. Changes were primarily found in the large districts in our sample and typically affected only a small number of schools. In Table 37, changes in the percent of schools targeted are shown within grade band, and only for those districts serving that grade band in both years. Thus, a district that discontinued its middle school Chapter 1 program during this time period is represented as having made a grade band change, not as having reduced the percent of middle schools selected for Chapter 1. As shown in Table 37, most of these changes occurred among elementary schools in our sample districts. Five districts increased and five reduced the number of elementary schools selected for Chapter 1 over this time period. Most of these were large districts with 30 or more schools, and these changes affected only a few schools in the district. For example, in district C1, 101 of 132 elementary and middle schools were served by Title I in 1980-81. In 1985-86, the district served 105 schools but at the same time the number of elementary and middle schools had grown to 106. While this represents nearly a 25% increase in the percentage of schools in the district selected for Chapter 1 participation in each of these years, it adds only four schools to the 101 schools served under Title I in 1980-81. Many districts in our sample have achieved this overall stability by changing their school targeting procedures. By using a different measure of poverty or by exercising different legislative options, districts in our sample have been able to serve approximately the same number of schools in 1986 as they did in 1981.

These changes in grade levels, subject areas, and percent of schools selected have been presented separately for each of these areas and do not reflect combinations of changes made by districts in our sample. For reasons discussed in the next section, many of these districts made changes in more than one of these areas since 1981. Some districts are represented several times in Table 37, even within a single type of change. For example, district M1 added both kindergarten and high school Chapter 1 programs since 1981, and is thus counted twice in the grade band changes in Table 37.

To represent these combinations of changes, and eliminate the "duplicated" count of districts that appears in Table 37, in Table 38 we classified the districts in our sample according to the number of these changes they made between 1981 and 1986. All but three of the 23 sample districts that could supply us with all of the information for both the 1980-81 and 1985-86 school years made one or more of these changes. As shown in Table 38, seven of these districts made only one change, 12 made two changes, and one made changes in all three areas. Changes in the grade levels in which Chapter 1 programs were conducted was the most frequent change, and this was often done in combination with changes in subject areas offered. There was no consistent pattern of increases or reductions in these areas in our sample districts. For example, of the six districts which changed both grade levels and subject areas, two increased both, two decreased both, and two increased one and reduced the other.

Student selection. Both nationally and across our sample districts, student participation in Chapter 1 has declined slightly since 1981. Anderson and Stonehill (1986) report a 7% decline in participation in Chapter 1 reading programs across the country from 1981 to 1984. On average, the 25 districts in our sample that could supply participation counts served about 10% fewer Chapter 1 students in 1985-86 than they did in 1980-81. These changes vary widely from district to district, however, ranging from a 56% reduction in students served by Chapter 1 in one district to a 220% increase in another. These variations are displayed in Table 39 where our sample districts are classified into categories based on the size and direction of the change between the two time periods in the number of students served. Districts experiencing additions or reductions of more than 25% from 1981 to 1986 are considered large change districts. Those that changed by 10% or less in either direction are small change districts. Districts changing

Table 38

Number of Districts in our Sample Making Combinations of Changes from 1980-81 to 1985-86

| Number and Type of Changes | Direction of Changes | | |
|---|---|---|---|
| | Increased Only | Reduced Only | Increased and Reduced |
| **One Change** | | | |
| Grade Bands | 1 | 2 | |
| Subject Areas | 1 | 0 | |
| Percent Schools | 2 | 1 | |
| **Two Changes** | | | |
| Grades and Subjects | 2 | 2 | 2 |
| Grades and Schools | | 2 | 1 |
| Subjects and Schools | | 2 | 1 |
| **Three Changes** | | | |
| Grades, Subjects, and Schools | 1 | | |

Note. Of the 23 districts that had complete data for both years, three districts made no changes and are not represented in the above table.

Table 39

Number of Districts Making Changes in Title I/Chapter 1 Participation from 1981 to 1986 in Sample of 25 Districts

| Size of Change | Number of Districts |
|---|---|
| Large Increase (more than 25%) | 5 |
| Medium Increase (11% to 25%) | 1 |
| Small Change (up to 10%) | 7 |
| Medium Decrease (11% to 25%) | 6 |
| Large Decrease (more than 25%) | 6 |

the number of students served from 11% to 25% are considered medium change districts. As shown in Table 39, our sample districts are spread fairly evenly across the five categories of change in number of students served since 1981. In all, 11 districts experienced large changes, seven experienced medium changes, and seven had only small changes in the number of students served over this time period. Although the average change across all of these districts represents only a small reduction in students served since 1981, there are large changes evident in 11 of the 25 districts in our sample.

Procedures used in student selection have also changed over this time period. Six of our sample districts report either an increased reliance on test scores or a more systematic use of teacher judgment. This is particularly true for those districts that are under frequent scrutiny by their SEA or under court-ordered desegregation. Administrators in these districts generally believe that standardized test scores and quantified ratings are more objective, consistent, and universally understood than the more subjective judgments of classroom and resource teachers. They believe that these scores provide more acceptable evidence if student selection decisions are questioned in monitoring visits, compliance reviews, or court proceedings.

Specific standards or cutoffs for student eligibility for the Chapter 1 program have also changed within five of our sample districts. Districts have raised or lowered criteria for participation depending on Chapter 1 funding, changes in local testing practices, or local research findings. District 01, for example, conducted a districtwide study of the Chapter 1 program's effects on the test scores of students of varying achievement levels. They determined the pretest levels of students showing the greatest gains from the program, and used these achievement levels as eligibility criteria for student selection in subsequent years.

Student achievement. Some of the changes in school and student selection practices described above produce changes in the achievement levels of the students selected for Chapter 1 in our sample districts. The relationship between some of these targeting practices and student achievement levels was investigated through simulations presented in Chapter 4 and Appendix E. These simulations modeled specific changes in school or student selection practices to determine the achievement level of the students selected as a result of those practices. In our sample districts, changes in selection practices typically occurred in combination with many other changes affecting student achievement in the district. These other changes make it difficult to meaningfully compare the achievement of Chapter 1 students with the achievement of Title I students in the same district five years earlier.

Twenty-one of our sample districts were able to supply the test scores of their Chapter 1 students in the most recently completed school year (1984-85 at the time of the study), and those of their Title I students prior to ECIA legislation. In many of the larger districts, demographic characteristics or testing practices in the district had changed significantly since 1981, however, so that direct comparisons are not possible. Small districts, serving only 5 to 10 Chapter 1 students at a grade, are also poor candidates for this comparison due to statistical error associated with small sample sizes. Table 40 contains data from two of our sample districts. These districts have sufficient sample size, and either have not undergone changes in demographic characteristics or testing practices, or were able to provide data to account for the influence of these changes on the achievement levels of Chapter 1 students. These examples illustrate the kinds of changes in the achievement levels of Chapter 1 students over this time period that are due to any of the changes cited above.

District D1 is one of the largest districts in our sample. As shown in Table 40, fewer students were served in the 1984-85 Chapter 1 program than in the 1980-81 program at each of grades 1 through 5.

However, the district's enrollment also declined over this time period. The 1984-85 Chapter 1 students represent a smaller proportion of the district population (13%) than do their 1980-81 Title I predecessors (17%). Their average pretest scores are not always lower, however, and changes in the average scores of the entire district at these grades do not clarify the pattern. District averages are as high or higher in 1984-85 than they were in 1980-81 at every grade.

Table 40

Reading Pretest Scores (in NCEs) From Two Sample Districts for 1981 and 1985 By Grade

| | Grade | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **District D1** | | | | | |
| 1981 | | | | | |
| # of Title I Students | 947 | 1,549 | 1,796 | 1,481 | 1,149 |
| # of Students in District | 7,791 | 7,871 | 8,004 | 8,235 | 8,517 |
| Mean Title I Pretest Score | 37 | 34 | 40 | 40 | 47 |
| Mean District Test Score | 53 | 51 | 53 | 53 | 53 |
| 1985 | | | | | |
| # of Chapter 1 Students | 780 | 1,337 | 865 | 1,041 | 992 |
| # of Students in District | 8,204 | 7,623 | 7,494 | 7,685 | 7,621 |
| Mean Chapter 1 Pretest Score | 42 | 39 | 38 | 39 | 40 |
| Mean District Test Score | 53 | 54 | 54 | 54 | 54 |
| | Grade | | | | |
| **District M1** | 2 | 3 | 4 | 5 | 6 |
| 1981 | | | | | |
| # of Title I Students | 329 | 341 | 338 | 348 | 352 |
| # of Students in District | 569 | 511 | 512 | 488 | 502 |
| Mean Title I Pretest Score | 32 | 32 | 26 | 33 | 33 |
| Mean District Test Score | 39 | 37 | 39 | 41 | 39 |
| 1985 | | | | | |
| # of Students | 419 | 323 | 428 | 379 | 316 |
| # of Students in District | 695 | 634 | 675 | 651 | 621 |
| Mean Chapter 1 Pretest Score | 39 | 40 | 36 | 38 | 34 |
| Mean District Test Score | 47 | 48 | 44 | 48 | 45 |

Small variations in Title I/Chapter 1 pretest scores over time and across grade levels were common in the few districts that could supply us with the data needed for this comparison. These were not directly attributable to any single change in selection practices or district characteristics in most instances. Instead, they were the net result of a complex interplay of any of a number of changes which occurred during this time period. Even in district D1, these differences tended to balance out across the grades. As is evident from Table 40, the average Chapter 1 pretest score in 1984-85 is the same as that of the 1980-81 Title I students--approximately 40 NCEs. In district D1, Chapter 1 is serving students who score at about the same achievement level as students did under Title I.

District M1 is one of the few districts in our sample showing very different achievement patterns for its recent Chapter 1 students than it did for Title I students. Reading test scores for Title I and Chapter 1 students in 1980-81 and 1984-85 in grades 2-6 are shown in Table 40. Participation in the program over this time period fluctuates from grade to grade. At three of the five grades, more students were served in 1984-85 than in 1980-81, although at all but grade 2, a smaller proportion of the district was served in Chapter 1 in 1984-85 than in 1980-81. A comparison of achievement levels of Title I and Chapter 1 students does not reflect this fluctuation, however. At all grades, 1984-85 Chapter 1 students' average pretest levels are higher than their 1980-81 Title I counterparts--by as much as 10 NCEs. By examining the achievement pattern for the entire district across these grades, however, it is evident that a similar increase in achievement levels occurred for all students in the district, not just those in the Title I/Chapter 1 program. District M1 illustrates the importance of considering trends in districtwide achievement in evaluating changes in the achievement characteristics of Chapter 1 students over time. As noted above, changes in districtwide achievement produce some indication of the influence of the variety of factors operating in a given district affecting student achievement.

The data presented in Table 40 provide examples of the changes in Title I/Chapter 1 achievement levels between 1981 and 1985, and the need to consider changes in other districtwide characteristics to interpret these data appropriately. Illustrations from our sample districts are obviously insufficient for a national assessment of recent changes in the achievement levels of Chapter 1 students. For this purpose, a larger, more representative data base is required. Fortunately, national data on the participation and achievement of students in Title I and Chapter 1 programs have been collected since 1980.

Reading pretest scores of Title I and Chapter 1 students are given in Table 41 from 1980-81 through 1983-84 (the most recent year national results were available at the writing of this report). At all but three grades these achievement levels vary by 1 NCE or less. Participation in Chapter 1 reading programs has declined only slightly in this time period, from 3.8 million to 3.6 million students (Anderson & Stonehill, 1986). Given the small change in the number of students participating in the program over this time period, these national data show stability in the achievement level of Chapter 1 students over time.

Table 41

Reading Achievement Scores of Chapter 1 Students Nationwide by Year and Grade[1]

| | School Year | | | | |
|---|---|---|---|---|---|
| Grade | 1980-81 | 1981-82 | 1982-83 | 1983-84 | Range |
| 2 | 38 | 37 | 40 | 38 | 3 |
| 3 | 35 | 34 | 36 | 35 | 2 |
| 4 | 34 | 34 | 35 | 35 | 1 |
| 5 | 34 | 35 | 35 | 34 | 1 |
| 6 | 34 | 35 | 35 | 34 | 1 |
| 7 | 34 | 35 | 35 | 34 | 1 |
| 8 | 34 | 34 | 34 | 34 | 0 |
| 9 | 33 | 34 | 34 | 34 | 1 |
| 10 | 31 | 32 | 32 | 31 | 1 |
| 11 | 31 | 32 | 32 | 30 | 2 |
| 12 | 30 | 30 | 30 | 29 | 1 |

[1] Scores are from spring testing and are reported in NCEs.

Source: Anderson and Stonehill, 1986.

Summary. Changes in targeting practices in our sample districts were usually made to achieve stability in the district Chapter 1 program, particularly in terms of the percent of schools providing Chapter 1 services. Districts used the flexibility in the program's legislative framework, employing different selection procedures and options to achieve this type of stability. Emphasis on the reading and math basic skill areas in the elementary grades continued in 1985-86 as in 1980-81. Reductions in services to other grade levels--pre-K, K, middle, and high schools--and changes in language arts subjects comprised most of the changes in these areas in our sample. The effects of these changes on the number and achievement levels of the students served are difficult to portray in isolation. Across our sample, there is little overall change in these outcomes, matching trends in national Chapter 1 evaluation data. On a district-by-district basis, however, there are several instances of large increases and reductions in the number of students served over this time period.

## What causes these changes in Chapter 1 school and student selection?

Since 1981, significant changes in Chapter 1 school and student selection practices and outcomes in our sample districts have usually been made in response to two major influences--changes in available resources for compensatory education or court-ordered desegregation. Other factors, including philosophical changes in the program intent, the influence of national or state reforms, and perceptions of new local educational needs, were in evidence in a few of our sample districts but were not as pervasive as changes in funding or mandatory desegregation orders.

The flexibility in the legislative framework of Chapter 1 made changes in selection practices possible, but this framework was not viewed as new or different from that of Title I in our sample districts. This was largely due to the perception of Chapter 1 as a "mature" federal program, continuing a more than 20 year tradition with its predecessor, Title I. State and local Chapter 1 staff had evolved from the "mutual adaptation" stage in which both the program and district learn and adapt to each other's needs and requirements (Berman & McLaughlin, 1978) to an "accustomization" stage in which both are well accustomed to each other's requirements and the program can be effectively customized to meet the needs of the district (Jung & Kirst, 1986).

In this section we show that changes in Chapter 1 funding over this time period were the most powerful of the influences experienced by our sample districts. These changes caused the districts in our sample to adopt different Chapter 1 school and student selection practices, occasionally producing changes in the number of students served, but more often in the intensity of the services provided. Changes in other compensatory education resources, such as state or local compensatory education programs, also played a significant role in some of our sample districts. District administrators attempted to manage these resources to maintain a consistent level of service to their educationally deprived students. Finally, court-ordered desegregation affected most of the large districts in our sample, although the origin of these effects typically pre-dates the 1980-81 school year.

Changes in Chapter 1 funding. Changes in Chapter 1 funding have affected both the level (number of students served) and intensity (allocation per pupil) of Chapter 1 services provided to students in our sample districts. In this section, we describe funding changes experienced by our sample districts since the 1980-81 school year, along with targeting and other program implementation changes which resulted from them. We show that, while most of these districts experienced medium or large reductions in their budgets, they tried to achieve some form of stability of Chapter 1 service to their schools and educationally deprived students. We illustrate changes in district program practices that enabled them to meet this goal. Reductions in grade levels served, subject matters offered, and staffing costs along with increased reliance on resources from other compensatory education programs were the key reasons Chapter 1 service levels were usually maintained.

The effects of changes in Chapter 1 funding on the level and intensity of Chapter 1 services provided by districts has been well studied in the literature. Analysis of data from the District Practices Study by Apling and Tashjian (1982) suggested that districts would respond to reductions in Chapter 1 allocation first by restricting grade bands, then subject matters, and, finally, schools. More recent analysis of this data base by Orland and Apling (1986) indicated that districts' changes in targeting in response to changes in budget are more complex. In their analysis they included consideration of the poverty level of the district, its prior level and intensity of compensatory service, the unmet needs of educationally deprived students in the district, and the relative size of the budget change. None of these factors, in and of itself, could predict changes in district practices. Rather, these factors interacted in a variety of ways to stir the decision making in a district.

Changes in Chapter 1 funding realized by our sample districts are in part a reflection of changes in the federal Chapter 1 allocation nationally. In fiscal year 1980, the federal Title I allocation was approximately $2.7 billion. These funds were allocated to school districts to operate their Title I programs in the 1980-81 school year--the last year of Title I. In the 1985 fiscal year, the federal Chapter 1 allocation for the 1985-86 school year was approximately $3.2 billion. While the federal Chapter 1 allocation had apparently increased in this time period by nearly $500 million, this was accompanied by increased costs in conducting Chapter 1 programs. Teachers' and teacher aides' salaries increased by 40.3% in this period (Educational Research Services, Inc., 1981-86). Since these staff salary costs make up 85% to 90% of Chapter 1 costs nationally, they provide a reasonable estimate of "inflation rate" for Chapter 1 programs year to year. Applying this adjustment to the federal Chapter 1 allocation change from 1980-81 to 1985-86 yields a decline of over $800 million--a 30% reduction in "real" dollars available for Chapter 1 programs across the country.

Changes in Chapter 1 allocation for the 27 districts that were able to supply us with program allocation data for both 1981 and 1986 are shown in Table 42. Chapter 1 allocations for the 1985-86 school year have been adjusted for inflation. The details of how the amount of the adjustment was determined are provided in Appendix F of this report. Adjusting the 1985-86 Chapter 1 allocations in our sample districts in this way allows a more direct comparison of resources available in 1981 Title I programs with those in 1986 Chapter 1 programs. Of these 27 districts, 21 experienced reductions in their Chapter 1 funding over this time period. Reductions ranged from 2% to 70%, with a median of about 25%. Two of our smallest districts (enrollment less than 1,000 students) experienced increases of over 100%, both due to significant changes in the 1980 census on which the 1986 allocations, but not the 1981 allocations, were based. In Table 42, districts are classified by large, medium, or small changes in their Chapter 1 allocations. Large changes are those exceeding 25% of a district's 1981 Title I budget. Small changes are those that fall within 10% of the 1981 budget. Medium changes are those between these extremes--budget changes between 11% and 25% of the 1981 Title I allocation.

According to these definitions, four of our districts experienced only small changes in their Chapter 1 allocation, eight had medium changes in their funding, and 15 experienced large changes of more than 25% of their 1981 Title I allocation in 1986. How did these districts respond to these changes? We examine these changes first in relation to the number of students served in the program. Do districts change the number of students they serve in Chapter 1 in direct proportion to changes in funding for the program? Alternatively, we examine the intensity of the services provided as measured by the allocation per pupil. Do districts attempt to maintain the same number of students

Table 42

Percentage Changes in Chapter 1 Allocation in 27 Sample Districts

| | District Code | Allocation 1980-81 | Allocation 1985-86* | Percent Change |
|---|---|---|---|---|
| **Large Increase (more than 25%)** | J1 | $ 9,824 | $ 24,748 | 152% |
| | M3 | 4,529 | 9,699 | 114% |
| **Medium Increase (11% to 25%)** | M1 | 676,440 | 773,679 | 14% |
| | C2 | 132,767 | 149,847 | 13% |
| | L2 | 550,564 | 619,702 | 13% |
| **Small Change (up to 10%)** | S5 | 202,004 | 211,935 | 5% |
| | D1 | 6,379,405 | 6,286,500 | - 1% |
| | S3 | 1,197,460 | 1,099,815 | - 8% |
| | L1 | 1,295,749 | 1,166,862 | -10% |
| **Medium Decrease (11% to 25%)** | E1 | 305,418 | 264,799 | -13% |
| | R1 | 4,384,930 | 3,589,923 | -18% |
| | S4 | 82,364 | 66,123 | -20% |
| | C1 | 5,537,852 | 4,420,192 | -20% |
| | B2 | 121,151 | 91,169 | -25% |
| **Large Decrease (more than 25%)** | G1 | 3,365,138 | 2,451,282 | -27% |
| | C5 | 113,000 | 78,563 | -30% |
| | S2 | 3,100,000 | 2,089,500 | -33% |
| | O1 | 4,001,012 | 2,495,664 | -38% |
| | M2 | 156,120 | 82,575 | -47% |
| | O2 | 523,517 | 299,387 | -43% |
| | P2 | 5,323,588 | 2,328,840 | -56% |
| | B1 | 988,850 | 401,800 | -59% |
| | P1 | 66,253 | 24,853 | -62% |
| | C4 | 544,727 | 199,995 | -63% |
| | S6 | 142,000 | 53,133 | -63% |
| | S1 | 15,252,680 | 5,376,476 | -65% |
| | H2 | 405,717 | 123,640 | -70% |

*Adjusted for inflation.

served while altering the intensity of those services on a per-pupil basis?

Table 43 relates the budget changes to changes in the number of students served by Chapter 1 in these districts. The information presented in the table tells us three important things about the relationship between changes in Chapter 1 funding and changes in student participation levels in the program. First, there is not a direct relationship between changes in budget and changes in the number of students served. Secondly, districts tend to reduce the number of students served less than the reduction in funding would suggest. Finally, the widest variety of changes in the number of students served is found among the 12 districts that experienced a large reduction in their Chapter 1 allocation.

Table 43

Distribution of Sample Districts According to Changes in the Number of Chapter 1 Students Served and Changes in Chapter 1 Allocation 1980-81 to 1985-86

| Changes in Allocation | Change in Number of Students Served | | | | |
|---|---|---|---|---|---|
| | Decrease | | Increase or Decrease | Increase | |
| | Large | Medium | Small | Medium | Large |
| Increase--Large | | | | | 2 |
| --Medium | | 2 | | | 1 |
| Increase or Decrease--Small | | 2 | 1 | | |
| Decrease--Medium | | 1 | 3 | | 1 |
| --Large | 6 | 1 | 3 | 1 | 1 |
| Total: | 6 | 6 | 7 | 1 | 5 |

If changes in Chapter 1 allocation were translated directly into the number of students served by the program, large reductions in budget would be accompanied by large reductions in the number of students served, small changes in budget would produce small changes in the number of students served, etc. As cited earlier, Orland and Apling (1986) found that this was not the case in their analysis of a nationally representative sample of school districts. The information presented in Table 43 on our sample of districts also suggests the effects are not that simple. Ten of the 25 districts that could supply us with the information for both time periods added or reduced the number of students served to a degree comparable to their changes in funding. Of the remaining 15, 10 showed either an increase or a smaller change in students served than the change in their Chapter 1 allocations would suggest. In all but one of these 15 districts, the changes in allocations were reductions. In other words, rather than make large reductions in their Chapter 1 students, these districts made other changes in their school/student selection or program implementation practices. In most of our sample districts, changes were made in the number of subject areas offered, the size of Chapter 1 instructional groups, the balance between the number of teachers and aides providing instruction, or the contribution of other compensatory education resources, rather than in the number of students served in the Chapter 1 program. These other changes affect the cost of the services provided to Chapter 1 students.

Changes in the intensity of Chapter 1 services can be represented by changes in districts' Chapter 1 allocation per pupil ratio from 1980-81 to 1985-86. Our findings are generally that, while Chapter 1 budgets and student participation have both declined in our sample districts since 1981, the reduction in funding has been steeper than the reduction in the number of students served in the program. This means that districts have lowered their expenditures per Chapter 1 student. Orland and Apling (1986) found this to be the case in their analysis of changes in expenditures per pupil (EXPP) in Chapter 1 programs from 1978 to 1981. As shown in Table 44, this is also the case in our sample districts. All but seven of the 25 districts that could supply us with this information had lower allocations per pupil served in 1985-86 than

## Table 44

## Average Allocation Per Pupil in 1980-81 and 1985-86 in 25 Sample Districts

| District Code | Per-Pupil Allocation | | Percent Change |
|---|---|---|---|
| | 1981 | 1986* | |
| G1 | $ 487 | $ 804 | 65% |
| J1 | 378 | 619 | 64% |
| M1 | 244 | 361 | 48% |
| D1 | 346 | 400 | 16% |
| L2 | 520 | 585 | 13% |
| E1 | 475 | 530 | 12% |
| L1 | 598 | 648 | 8% |
| O2 | 522 | 506 | - 3% |
| O1 | 520 | 462 | -11% |
| S2 | 765 | 653 | -15% |
| R1 | 843 | 718 | -15% |
| S3 | 502 | 418 | -17% |
| C1 | 793 | 599 | -24% |
| S4 | 471 | 354 | -25% |
| C2 | 891 | 652 | -27% |
| M3 | 906 | 606 | -33% |
| S1 | 702 | 425 | -39% |
| P2 | 544 | 324 | -40% |
| B2 | 757 | 365 | -52% |
| C5 | 1,119 | 534 | -52% |
| M2 | 507 | 241 | -52% |
| H2 | 799 | 338 | -58% |
| C4 | 689 | 267 | -61% |
| S6 | 714 | 278 | -61% |
| P1 | 656 | 246 | -63% |
| Average | 626 | 486 | -22% |
| Minimum | 244 | 241 | -63% |
| Maximum | 1,119 | 804 | 65% |

*Adjusted for inflation.

in 1980-81. Across these districts, the average costs decreased from $626 to $486 for each student participating in the Chapter 1 program. Where these costs ranged from just under $250 to over $1,100 per pupil in 1981, the range was considerably smaller in 1986, from $241 to $804.

In Table 45, the 25 districts are classified by the degree of budget change they experienced and their response in terms of changes in the number of students served or the allocation per pupil. Changes in intensity are more common than changes in the number of students served--10 of the 25 districts maintained Chapter 1 services to about the same number of students by changing their intensity in direct proportion to their change in funding. Four of our sample districts made changes in both. All four of these experienced large changes in their Chapter 1 allocation over this time period.

Table 45

Changes in the Number of Students Served and Intensity of Services Provided in Chapter 1 by Size of Change in Chapter 1 Allocation for 25 Sample Districts

| Changes in Allocation | Proportional Changes in: | | | |
|---|---|---|---|---|
| | Number of Students | Allocation Per Pupil | Both | Neither |
| Large Increase (more than 25%) | 1 | 0 | 1 | 0 |
| Medium Increase (11% to 25%) | 0 | 1 | 0 | 2 |
| Small Change (less than 10%) | 1 | 1 | 0 | 1 |
| Medium Decrease (11% to 25%) | 1 | 3 | 0 | 1 |
| Large Decrease (more than 25%) | 3 | 5 | 3 | 1 |
| Total: | 6 | 10 | 4 | 5 |

As we noted earlier, changes in the Chapter 1/Title I allocation per pupil were represented by a variety of changes in Chapter 1 program design or delivery. Descriptions of the types of changes in program design and delivery made by some of our districts are presented below as examples.

In district S6, a small suburban district, a large reduction in funding from 1981 to 1986 was accompanied by no change in the number of students served (i.e., level), but a large reduction in the average allocation per pupil (i.e., intensity). Its Chapter 1 allocation had gradually decreased from $142,000 in the 1980-81 school year to $89,000 in 1985-86--a 61% reduction after adjusting for inflation. The district served approximately the same number of students each of these years, and all three elementary schools in the district received Chapter 1 funds. When it became apparent to district administrators that their Chapter 1 allocation would be reduced still further during this period, they made a deliberate shift to reduce program costs by employing more teacher aides and fewer teachers in the Chapter 1 program. By 1986, the district had only one certificated teacher and 17 teacher aides to provide Chapter 1 services to the three schools. By making significant changes in its Chapter 1 staffing, district S6 was able to meet its goal of maintaining services to all schools and approximately the same number of educationally deprived students in the district.

A change in the ratio of teachers to aides in the Chapter 1 instructional staff played the most significant role in large changes in per-pupil allocation among our sample districts. These changes were often associated with other program decisions in the districts, however. District M2, a small suburban district, dropped both the reading and language arts Chapter 1 programs in 1980-81 in response to a state initiative for improvement of basic mathematics skills in the elementary grades. The district adopted a computer-assisted instructional strategy in the Chapter 1 math program and employed teacher aides to work with the students in the math labs. The achievement gains of these students were the highest ever for the program in that district. With this evidence of success and the large reduction in cost of the program, the district was able to restore services in reading and language arts in successive years using the same instructional approach and staffing. While these changes took place over several years between 1980-81 and 1985-86, the net result was that the district served slightly more students in Chapter 1 while absorbing a large reduction in funding over this time period. Consequently, its per-pupil allocation decreased from $507 to $241.

District G1, a large urban district, altered the balance between teachers and aides in the opposite direction, even though it experienced a 27% decline in its Chapter 1 allocation over this time period. The stimulus for the change was a districtwide study of the quality of the Chapter 1 program which recommended major changes in the program in order to improve its effectiveness. Two of these changes affected both the level and the intensity of Chapter 1 services provided. The first dealt with lowering the maximum student-to-instructor ratio in Chapter 1. When the district reduced the number of students that each teacher could work with without making a proportional increase in the number of instructional staff, fewer students could participate in Chapter 1. With the large reduction in Chapter 1 funding over this time period the district reduced its level of services from nearly 7,000 students in 1980-81 to just over 3,000 students in 1985-86. The second change was to reduce the number of aides in the program and use teachers more prominently in the instruction of Chapter 1 students, again, in the interest of enhancing the quality of the program. The effect of serving fewer students more intensely was to increase the Chapter 1 per-pupil allocation in the district from $487 to $804--the largest increase in our sample districts over this time period.

The use of other compensatory education resources enabled some of our sample districts to maintain service to the same number of students in the face of reductions in Chapter 1 allocations. In small districts this often took the form of "split-funding" of compensatory education teachers and aides. In district P1, for example, approximately the same number of students was served in 1985-86 as was served in 1980-81, while the Chapter 1 allocation had declined by more than 60% in that time. Over this time period, district compensatory education funds were used to pay the portion of the teacher and aide salaries not covered by

Chapter 1. By 1985-86 Chapter 1 funds were supporting significantly less than 50% of the program staff salaries. Although the same number of students received Chapter 1 services, the costs borne by Chapter 1 had substantially declined--from $656 to $246 per pupil.

As reported earlier, only five of the districts in our sample supplying us with the necessary data experienced increases in their Chapter 1 budgets, after adjusting for inflation, over this time period. The two districts that received large percentage increases were among the smallest in our sample, both with district enrollments of less than 1,000 students. They each served all schools in the district (one and two schools, respectively) as they had since the beginning of their programs. Both of these districts responded to Chapter 1 funding increases with large increases in the number of students served in Chapter 1.

In summary, the effects of Chapter 1 budget changes on targeting practices and outcomes are varied and complex in our sample districts. It is evident that districts strive to maintain service to the same number of Chapter 1 schools and students while making other changes in program design, staffing, or relationships with other special programs. In the face of declining budgets, many districts reduced the grade levels served by Chapter 1, relied more heavily on the less costly teacher aides than teachers, and reduced the subject areas covered by the Chapter 1 program. The amount of change in the number of students served was less pronounced than that for program allocations, thus producing changes in the intensity (per-pupil allocation) of Chapter 1 services in many of our sample districts. Allocations per pupil participating in Chapter 1 programs in our sample districts in 1985-86 were more than 20% lower than in 1980-81.

Changes in non-Chapter 1 compensatory education resources. The availability of resources for compensatory education is a reflection of both the Chapter 1 allocation and the other special programs for educationally deprived students that exist in the district (i.e., special education, bilingual education, Chapter 1 migrant, state compensatory education, and district compensatory education). As we pointed out in our earlier chapter on student selection, districts in our sample typically conduct several other categorical programs, each with its own program intents and targeting restrictions. In many of these districts, program administrators manage these resources to provide services to as many needy students as possible while trying to minimize disruption of regular classroom activities. Of all of these special programs, state compensatory education programs are the most potent influences on recent changes in Chapter 1 targeting in our sample districts. While special education is the most frequently available special program other than Chapter 1 across our sample districts, its selection procedures have been in place since the passage of P.L. 94-142. This pre-dates the period in which we are examining change in district targeting practices by several years.

Consistent with a report by Funkhouser and Moore (1985) on state compensatory education programs nationally, districts in our sample indicated these programs played an increasingly important role in serving educationally deprived students. Of the 15 districts in our sample that also have state compensatory education programs, most districts target these services to a slightly different segment of students than they do Chapter 1 services, so that few students receive services from both Chapter 1 and state compensatory education. These differences are usually in grade levels, targeted schools, and different achievement levels of students they serve in the district. In most instances, this lack of overlap with Chapter 1-eligible students is a deliberate decision on the part of districts. With declines in Chapter 1 funding in recent years, there has been less duplication of service across programs and greater attention paid to effectively managing these complementary resources at the district level.

In district O2, for example, the Chapter 1 program was recently discontinued in grades 1-3 to focus on grades 4-6. The state compensatory education program in that state has as its focus an early prevention model and these resources could be used to provide compensatory education services in the primary grades. In districts D1 and L1, the state compensatory education program is targeted to the middle and high school levels, so Chapter 1 serves educationally deprived students at the elementary level only. In district G1, state compensatory education funds are targeted first to non-Chapter 1 schools. Only if all of these students can be served in state compensatory education can those services be provided to educationally deprived students in Chapter 1 schools.

Court-ordered desegregation. In the last 20 years, court-ordered desegregation has affected 12 of the 16 largest districts in our sample. Most of the court orders pre-date the period of comparison in this study, but these orders have had some effects on targeting procedures and outcomes. School attendance areas were redrawn, schools were consolidated, magnet school programs were initiated, and different targeting options were used. Equal opportunity for program services became the explicit goal of Chapter 1 targeting in these districts.

District S1 responded to a 1980 desegregation order by reducing its Chapter 1 grade bands to elementary schools only, using free or reduced lunch counts of enrolled students instead of AFDC data from school attendance areas as its poverty measure, and employing the 25% rule instead of the district average percent to qualify schools for Chapter 1. All of these were changes from their practices before the desegregation order. With the district's busing and magnet school programs, students who attended a given school often resided in a different school attendance area. School attendance area poverty statistics using AFDC, the district's traditional poverty measure, were an inaccurate reflection of the poverty level of students in a given school. Free or reduced lunch counts, based on students actually in attendance in a school, were substituted. A result of the busing program in S1 was that elementary schools throughout the district became more similar in poverty level as measured by the school lunch counts. All elementary schools exceeded 25% poverty for the first time. District S1 was able to qualify all elementary schools for Chapter 1 by employing the 25% rule in its school targeting. The combination of the three changes cited above enabled district S1 to meet its goal of equal opportunity for service in a specific way--provide Chapter 1 services to all elementary schools in the district.

Some of the districts in our sample affected by desegregation orders were able to qualify more schools within a grade band for Chapter 1 by using different options or measures of poverty in their school selection procedures, as did district S1. Staff in these districts indicated that desegregation had reduced the range of poverty among their schools. However, the poverty ranges in our desegregated districts are still wide, preventing them from qualifying for the uniformly high poverty concentration option, for instance.

## Summary

Since Title I was replaced by Chapter 1 in 1981, districts in our sample made significant changes in their school and student selection practices, often for the purpose of achieving stability in the outcomes of these practices--the number of schools and students participating in the Chapter 1 program. These changes were most often found in the choice of Chapter 1 grade bands, subject matters, staffing patterns, and the relationship of Chapter 1 with other special programs in the district. Forces behind these changes were typically in the form of budget reductions or external mandates such as court-ordered desegregation. In a federal program with the long history of Title I/Chapter 1, districts have become accustomed to its intent and regulations. They strive to maintain Chapter 1 service to the same number of schools and students by making changes in their targeting practices or in the intensity of the services provided.

In this chapter, we discussed five major findings regarding stability and change in school and student selection practices and outcomes in our sample districts. Briefly, these are:

- Since 1981, the districts in our sample have attempted to maintain Chapter 1 funds to the same number of schools. Even when fiscal resources fluctuate, many districts employ different school selection procedures or change the grade bands targeted or staffing patterns to achieve this stability.

- Our sample districts have maintained their concentration of Chapter 1 programs in the elementary grades since 1981, and have even increased these services in a few instances. At the same time, fewer of these districts have offered Chapter 1 services at other grades--pre-K, K, middle, and high school.

- Since 1981, districts in our sample have continued their focus on reading and math projects. The few changes in subject areas offered have usually affected language arts.

- Overall, districts in our sample served slightly fewer students in the program in 1986 than they did in 1981. Although there were instances of both large increases and large reductions in students served in districts in our sample, these were not typically as extreme as the fluctuations in Chapter 1 funding levels across this period. Changes in the intensity of Chapter 1 services were in greater evidence than changes in the number of students served in our sample districts.

- Since 1981 in some of our districts there has been a greater reliance on test scores and quantified systems of teacher judgment to select students for Chapter 1.

## Participation of Nonpublic School Students in Chapter 1

### Overview

In this section, information collected from districts in our sample on the Chapter 1 participation of nonpublic school students is used to illustrate the process involved in selecting and delivering services to such students. In our sample of districts, Chapter 1 staff begin the selection process at the school level, and at that point some nonpublic schools in our districts are excluded from having students receive service and other nonpublic schools refuse to have their students served. If nonpublic schools meet whatever district criteria are used and wish to have students served, the process of student selection begins. In our sample, this process is often but not always similar to that used to select public school students.

The year that information was collected from our sample of districts was the first school year after the Felton decision, and this decision created logistical problems for some districts serving sectarian schools. These problems sometimes resulted in at least a temporary reduction in service to nonpublic school students. The immediate impact of this court decision on the school and student selection processes in some districts in our sample is also discussed in this section.

### What is the extent of nonpublic school student Chapter 1 participation in the 30-district sample?

The participation rate of nonpublic school students in Chapter 1 has always been low compared to the participation rate of public school students. In 1983-84, 4.6% of Chapter 1 students were enrolled in nonpublic schools, compared to 12.7% of students nationwide. In our 30-district sample, participation of nonpublic school students in Chapter 1 is also very low, although we did not receive enough data to quantify this in each of our sites. Data available to us in this study are mainly qualitative data collected from a sample of public school systems, and these data can offer some insight into the relationship between Chapter 1 and nonpublic school students. The reasons for the low level of nonpublic school student participation in our sample are related to the nature of nonpublic schools in the sample, the nature of their student populations, school district policies, and certain logistical problems associated with delivering and receiving Chapter 1 services.

What explanations did school districts in the sample give for the level of nonpublic school student participation in their districts?

Nonpublic schools elect not to have students participate. In our 30-district sample, 23 districts have nonpublic schools within their boundaries. In four of these districts, all nonpublic schools refused to have students participate in the district's Chapter 1 program. In 12 districts where we know the total number of nonpublic schools and the number of nonpublic schools with students participating in Chapter 1, only 17% of the nonpublic schools have students participating in the program. Of the 83% of the nonpublic schools with no participating students, many may have no eligible students, either because

(a) the nonpublic school does not include a targeted grade level, or

(b) no students attending the nonpublic school live in an eligible attendance area, or

(c) no students attending the nonpublic school meet the district's definition of educational deprivation.

Some districts report that nonpublic schools with only a few eligible students may also decline to participate, apparently feeling that the possible benefits to the few students would not justify the administrative burden.

Districts may not offer services. In our sample, one district had changed its grade band targeting in a way that would make a nonpublic school newly eligible to participate, but did not inform the nonpublic school of the change. In two other districts, the court decision in Aguilar vs. Felton had the effect of temporarily stopping Chapter 1 service delivery to sectarian school students. The impact of this decision will be discussed in the next section.

Table 46 summarizes service to nonpublic school students in our sample. A few districts in our sample require that nonpublic schools meet certain criteria before their students can be considered for Chapter 1 services, and these criteria exclude some schools from service. This will be discussed in more detail later.

Table 46

Chapter 1 Service to Nonpublic Schools in the 30-District Sample

| Condition | Number of Districts | Percent of Districts |
|---|---|---|
| Service delivered to students of at least one nonpublic school | 15 | 50.0 |
| No nonpublic schools in district | 7 | 23.3 |
| No nonpublic schools chose to participate | 4 | 13.3 |
| Service temporarily stopped | 2 | 6.7 |
| District failed to offer service | 1 | 3.3 |
| Services unknown, funneled through non-LEA administration | 1 | 3.3 |
| Total: | 30 | 99.9% |

## What has been the impact in our 30-district sample of Aguilar vs. Felton on nonpublic school student participation in Chapter 1?

The Felton decision. On July 1, 1985 the Supreme Court in Aguilar vs. Felton held that the method commonly employed by local educational agencies to serve sectarian school students under the Chapter 1 program was unconstitutional because it violated the establishment of religion clause of the First Amendment.[5] The Felton decision ruled that the provision of federally-funded instructional services to children attending sectarian elementary and secondary schools is unconstitutional if the services are provided inside sectarian classrooms, but constitutional when the services are provided off the premises of the sectarian schools. However, the decision appears to have left intact prior rulings concerning the provision of certain publicly-funded nutritional, diagnostic, health, and testing services to sectarian students. Unlike the instructional services, these services are considered to be constitutional even when provided on the premises of the schools attended.

As Cooper has noted (1986), the greatest and most immediate concern of school districts was how, given the court mandate, to continue providing Chapter 1 services to sectarian school students.

> When public schools opened two months after Felton, September 1985, they faced real problems. Somehow, districts were required to serve non-public school children with remedial help, as they had for almost 20 years since the passage of the Elementary and Secondary Education Act of 1965. If districts could not come up with legal and acceptable means for responding to the court decision, these public school systems ran the risk of losing all their Chapter 1 money. (p. 1)

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[5] It is important to note that where the schools involved are not religious in nature no constitutional question arises under the establishment clause regarding the provision of Chapter 1 services. Thus, only sectarian schools are affected by the decision.

Of particular relevance to this study are the implications of the Felton decision for selecting eligible Chapter 1 students in sectarian schools. Diagnostic testing for Chapter 1 eligibility purposes still can be done on the premises of the sectarian schools. However, once the nonpublic school students are selected for participation, the delivery of Chapter 1 program services by Chapter 1 instructional staff must be removed from the sectarian classroom setting. Hence, the Felton decision, handed down just weeks before the beginning of the school year, posed difficult legal and practical problems for public and private school officials around the country. Interviews of district staff in our sample were conducted from January to April of the 1985-86 school year, in the first year following the Felton decision. Thus, although Chapter 1 staff were not asked specifically about the impact of this ruling, in several districts the topic was raised by district staff in discussing their services to nonpublic schools.

Impact on some districts in our sample. In eight of our 30 districts, Chapter 1 staff spontaneously mentioned the Felton decision when asked about the participation of nonpublic school students in Chapter 1. In two districts, district staff had been unable to locate an acceptable alternative site in which to deliver services to sectarian school students, and decided to suspend services to these students until a satisfactory plan could be made. In five districts, the Felton decision caused at least a temporary reduction in services to sectarian school students because of decreased student participation. Specifically, in these districts services had formerly been delivered to sectarian school students in their own sectarian schools. The inconvenience involved in having students transported to another service delivery site led some sectarian schools and the parents of some individual sectarian school students to refuse service. In one of these districts, the additional time and expense involved in transportation resulted in a decision to offer services to fewer sectarian school students. One other district reported that while the Felton decision had created more work for the Chapter 1 staff, they had been able to maintain service to sectarian school students at the former level.

To summarize, we know that the Felton decision affected service to nonpublic school students in eight of our districts, or 44% of districts who had served such students in the previous year. In two districts, services were stopped for at least one year. In five districts, fewer sectarian school students were served after the decision. Other districts in the sample may have been similarly affected, but did not report this, or they may not have been affected.

How are nonpublic school students selected to participate in Chapter 1? The selection of public school students for participation in Chapter 1 is a two-step process, involving first identifying schools with attendance areas having the highest percentage or number of students from low income families, and second, within those schools identifying students on the basis of educational need.

In contrast, targeting nonpublic school students does not involve the step of identifying the poorer nonpublic schools. Instead, districts must locate those individual students who would be participating in Chapter 1 if they attended a participating public school. Districts should identify all nonpublic school students residing within eligible (low-income) public school attendance areas and, if those students are within targeted grade bands and if private school officials or parents so desire, determine if they are educationally deprived. If the students prove to be educationally deprived, the district should offer them appropriate Chapter 1 services.

Locating nonpublic school students in high poverty school attendance areas. In practice, districts in our sample do not appear to search all eligible school attendance areas for nonpublic school students to test. Instead, they usually begin by locating the nonpublic schools within their district. In our sample, 15 districts reported delivering services to nonpublic schools. Of these districts, 12 reported their selection methods in sufficient detail that we can report the process, and all 12 begin at the school, rather than the student level.

In five districts, nonpublic schools have to meet certain criteria before any of their students can participate. In four of these districts, the nonpublic school must be located within a Chapter 1 eligible school attendance area or near a Chapter 1 public school. Three districts require that the nonpublic school have some minimum number of students showing educational deprivation, one requires a minimum number of students receiving free or reduced-price lunches, and one requires that the school be licensed. (Most of these districts have more than one criterion.) Seven districts do not have any school-level requirements for participation, aside from the requirement that the school be within the district boundaries. If nonpublic schools are found to be eligible, they are asked if they are interested in having eligible students participate in Chapter 1. Not all are interested.

Selecting nonpublic school participants. Having located nonpublic schools which meet district criteria for participation and are interested in having students participate, districts then decide which, if any, individual nonpublic school students are eligible. In three districts within our sample, nonpublic school students are selected in exactly the same way public school students are selected--that is, the same cutoff score on the same test is used to select both types of participants. In six districts, the selection methods are very similar, but not the same. For example, the same cutoff score may be applied but using a different test, or only teacher-referred students may be tested, but with the same test and cutoff score as are used for grade-wide testing in the public schools. In three districts, the selection process is entirely different. For example, teacher referrals are used in place of test scores.

Nonpublic school students who participate in Chapter 1 should reside in eligible school attendance areas. Six districts in our sample specifically reported that they would serve only such students. Two specifically said they had no such requirement. (One of these districts requires that the nonpublic school be located in an eligible school attendance area, and one requires only that the nonpublic school students live in the school district.) Seven districts did not report whether they had any residence requirement.

## Summary

In our sample, as in the nation, nonpublic school participation accounts for a very small portion of students participating in Chapter 1. In districts where nonpublic school students are receiving Chapter 1 services, students are selected to receive services in a variety of ways, usually beginning with a district decision to offer services to the nonpublic school the student attends. Within our small sample, the wide variety of criteria and methods used to select nonpublic school students reveals that great diversity must exist across the country in the methods school districts use to locate and serve educationally deprived nonpublic school students. Our sample also offers examples of the logistical problems created in some districts by the Felton decision, and illustrates that as a result of Felton sectarian school students in some districts have experienced at least a one-year reduction or elimination of Chapter 1 services.

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# APPENDIX A

## Data Tables

## Table A-1

### Percent of Poor Students in Average Chapter 1 and Non-Chapter 1 Schools in 30 Districts

| | | Chapter 1 Schools | | Non-Chapter 1 Schools | | |
|---|---|---|---|---|---|---|
| District | District-Wide Poverty | # of Schools | % Poor in Avg. School* | # of Schools | % Poor in Avg. School* | Chapter 1/ Non-Chapter 1 Difference |
| **Low Poverty** | | | | | | |
| C2 | 2.5 | 5 | 12 | 25 | 3 | 9.0 |
| E1 | 10.1 | 8 | 17 | 9 | 7 | 10.0 |
| J1 | 7.9 | 2 | 5 | 0 | | |
| P1 | 6.0 | 1 | 6 | 0 | | |
| S4 | 1.0 | 2 | 2 | 20 | 2 | 0.0 |
| Total: | | 18 | | 54 | | |
| **Medium Poverty** | | | | | | |
| B1 | 19.1 | 7 | 44 | 0 | | |
| G1 | 13.8 | 27 | 47 | 30 | 28 | 19.0 |
| H1 | 16.5 | 6 | 18 | 0 | | |
| L2 | 17.8 | 11 | 50 | 23 | 16 | 34.0 |
| S6 | 17.2 | 3 | 19 | 0 | | |
| Total: | | 54 | | 53 | | |
| **High Poverty** | | | | | | |
| B2 | 31.0 | 3 | 30 | 0 | | |
| C4 | 41.1 | 11 | 46 | 1 | 32 | 14.0 |
| C5 | 22.6 | 4 | 30 | 1 | 8 | 22.0 |
| D1 | 36.2 | 90 | 48 | 5 | 13 | 35.0 |
| D2 | 36.6 | 129 | 52 | 104 | 37 | 15.0 |
| L1 | 29.6 | 14 | 47 | 5 | 12 | 35.0 |
| M2 | 40.1 | 3 | 36 | 0 | | |
| M3 | 29.3 | 1 | 25 | 0 | | |
| O1 | 33.6 | 53 | 42 | 27 | 16 | 26.0 |
| P2 | 26.5 | 54 | 39 | 32 | 14 | 25.0 |
| R1 | 37.1 | 25 | 63 | 22 | 39 | 24.0 |
| S2 | 40.2 | 19 | 52 | 15 | 31 | 21.0 |
| S3 | 20.5 | 14 | 40 | 8 | 24 | 16.0 |
| S5 | 23.5 | 5 | 25 | 0 | | |
| Total: | | 425 | | 220 | | |
| **Very High Poverty** | | | | | | |
| C1 | 53.8 | 62 | 63 | 4 | 51 | 12.0 |
| H2 | 72.2 | 2 | 71 | | | |
| J2 | 78.9 | 4 | 72 | 0 | | |
| M1 | 78.4 | 11 | 83 | 0 | | |
| O2 | 87.8 | 5 | 98 | 0 | | |
| S1 | 58.7 | 101 | 87 | 0 | | |
| Total: | | 185 | | 4 | | |
| Grand Total: | | 682 | | 331 | | 19.8 |

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*Percent of students receiving free and/or reduced lunches computed from data supplied by district. May not match districtwide poverty figures, which were taken from Chapter 1 applications and may have been calculated on other bases.

## Table A-2

### Percent Poor Students in the Average Chapter 1 School and Non-Chapter 1 School in 30 Districts

| | Chapter 1 Schools | | Non-Chapter 1 Schools | | |
|---|---|---|---|---|---|
| | # of Districts | % Poor in Avg. School | # of Districts* | % Poor in Avg. School | Difference Between Avg. Schools |
| Low poverty | 5 | 12 | 3 | 3 | 9 |
| Medium poverty | 5 | 42 | 2 | 23 | 19 |
| High poverty | 14 | 47 | 10 | 29 | 18 |
| Very high poverty | 6 | 78 | 1 | 51 | 27 |
| Overall: | 30 | 54 | 16 | 24 | 30 |

*Number of districts differs from number of districts with Chapter 1 schools because in some districts Chapter 1 serves all schools.

## Table A-3

### Achievement Scores in the Average Chapter 1 and Non-Chapter 1 Schools in 27 Districts

| | Chapter 1 Schools | | Non-Chapter 1 Schools | | |
|---|---|---|---|---|---|
| District | # of Schools | Mean Ach. Score | # of Schools | Mean Ach. Score | Chapter 1/ Non-Chapter 1 Difference |
| **Low Poverty** | | | | | |
| C2 | 5 | 62.1 | 25 | 63.8 | - 1.7 |
| J1 | 2 | 61.0 | 0 | N/A | |
| P1 | 1 | 57.3 | 0 | N/A | |
| S4 | 2 | 59.4 | 20 | 64.9 | - 5.5 |
| **Medium Poverty** | | | | | |
| B1 | 7 | 57.3 | 0 | N/A | |
| G1 | 27 | 49.5 | 30 | 55.3 | - 5.8 |
| H1 | 6 | 51.2 | 0 | N/A | |
| L2 | 11 | 56.0 | 23 | 64.4 | - 8.4 |
| S6 | 3 | 51.3 | 0 | N/A | |
| **High Poverty** | | | | | |
| B2 | 4 | 52.7 | 0 | N/A | |
| C4 | 11 | 50.6 | 0 | N/A | |
| D1 | 90 | 53.1 | 5 | 57.2 | - 4.1 |
| D2 | 129 | 51.9 | 104 | 53.8 | - 1.9 |
| L1 | 14 | 47.0 | 5 | 53.6 | - 6.6 |
| M2 | 3 | 47.9 | 0 | N/A | |
| M3 | 1 | 66.0 | 0 | N/A | |
| O1 | 53 | 46.1 | 27 | 59.1 | -13.0 |
| P2 | 44 | 52.7 | 31 | 64.0 | -11.3 |
| R1 | 25 | 48.2 | 22 | 58.4 | -10.2 |
| S2 | 19 | 46.2 | 15 | 52.4 | - 6.2 |
| S3 | 14 | 52.1 | 8 | 55.6 | - 3.5 |
| S5 | 5 | 54.8 | 0 | N/A | |
| **Very High Poverty** | | | | | |
| C1 | 62 | 48.7 | 4 | 52.0 | - 3.3 |
| H2 | 4 | 47.2 | 0 | N/A | |
| M1 | 11 | 48.5 | 0 | N/A | |
| O2 | 5 | 46.5 | 0 | N/A | |
| S1 | 101 | 48.7 | 0 | N/A | |
| Total: | 1,137 | | 634 | | |
| Mean Difference:* | | | | | - 6.3 |

*Weighted by district; that is, each district has equal weight.

## Table A-4

### Percent of Special Education Students in the Average Chapter 1 School

| | Chapter 1 Schools | | Non-Chapter 1 Schools | | |
|---|---|---|---|---|---|
| District | # of Schools | % Sp.Ed. in Avg. School | # of Schools | % Sp.Ed. in Avg. School | Chapter 1/ Non-Chapter 1 Difference |
| **Low Poverty** | | | | | |
| C2 | 5 | 15.5 | 25 | 11.8 | 3.7 |
| P1 | 1 | 16.1 | 0 | | |
| S4 | 2 | 1.6 | 20 | 1.9 | - 0.3 |
| Total: | 8 | | 45 | | |
| Mean District Difference: | | | | | 1.7 |
| **Medium Poverty** | | | | | |
| B1 | 7 | 3.2 | 0 | | |
| G1 | 27 | 9.2 | 30 | 8.3 | 0.9 |
| H1 | 6 | 12.9 | 0 | | |
| L2 | 11 | 14.7 | 23 | 8.1 | 6.6 |
| S6 | 3 | 8.1 | 0 | | |
| Total: | 55 | | 53 | | |
| Mean District Difference: | | | | | 3.75 |
| **High Poverty** | | | | | |
| B2 | 4 | 10.6 | 0 | | |
| D1 | 90 | 11.4 | 5 | 6.5 | 4.9 |
| L1 | 14 | 15.3 | 5 | 15.8 | - 0.5 |
| M2 | 3 | 15.3 | 0 | | |
| M3 | 1 | 13.3 | 0 | | |
| O1 | 53 | 12.0 | 27 | 10.2 | 1.8 |
| P2 | 44 | 10.9 | 31 | 8.2 | 2.7 |
| R1 | 25 | 10.2 | 22 | 5.3 | 4.9 |
| S2 | 19 | 14.5 | 15 | 15.7 | - 1.2 |
| S5 | 5 | 8.9 | 0 | | |
| Total: | 258 | | 105 | | |
| Mean District Difference: | | | | | 2.1 |
| **Very High Poverty** | | | | | |
| C1 | 62 | 11.8 | 4 | 7.1 | 4.7 |
| M1 | 11 | 6.2 | 0 | | |
| O2 | 5 | 1.0 | 0 | | |
| S1 | 101 | 9.1 | 0 | | |
| Total: | 179 | | 4 | | |
| Mean District Difference: | | | | | 4.7 |

Table A-5

Percent of LEP Students in the Average Chapter 1 School
and the Average Non-Chapter 1 School in 13 Districts

| | Chapter 1 Schools | | Non-Chapter 1 Schools | | Chapter 1/ |
|---|---|---|---|---|---|
| District | # of Schools | % LEP | # of Schools | % LEP | Non-Chapter 1 Difference |
| **Low Poverty** | | | | | |
| C2 | 5 | 1.6 | 25 | 0.3 | 1.3 |
| S4 | 2 | 11.3 | 20 | 8.4 | 2.9 |
| **Medium Poverty** | | | | | |
| B1 | 7 | 5.1 | 0 | | |
| H1 | 6 | 1.5 | 0 | | |
| **High Poverty** | | | | | |
| D1 | 90 | 0.1 | 5 | 0 | 0.1 |
| L1 | 14 | 0.6 | 5 | 0.2 | 0.4 |
| M3 | 1 | 2.5 | 0 | | |
| O1 | 53 | 4.0 | 27 | 1.6 | 2.4 |
| P2 | 44 | 4.1 | 31 | 1.2 | 2.9 |
| R1 | 25 | 4.5 | 22 | 0.4 | 4.1 |
| S2 | 19 | 12.2 | 15 | 9.5 | 2.7 |
| S3 | 14 | 3.4 | 8 | 2.6 | 0.8 |
| **Very High Poverty** | | | | | |
| M1 | 11 | 24.9 | 0 | | |
| Total: | 291 | | 158 | | |
| Mean District Difference:* | | | | | 1.8 |

*The mean is calculated with each district weighted equally.

## Table A-6

### Number and Percent of Schools in Each School Poverty Range Whose Poverty is Above Their District Average, by Range of District Poverty Level

| District Poverty Level | | School Poverty Ranges | | | | | |
|---|---|---|---|---|---|---|---|
| | | 0-7% | 8-12% | 13-20% | 21-50% | >50% | Total |
| Low to Moderate (0-12%) | | | | | | | |
| | Number | 21 | 7 | 4 | 2 | 0 | 34 |
| | % | 62 | 21 | 12 | 6 | 0 | 101 |
| Moderate (13-20%) | | | | | | | |
| | Number | 0 | 0 | 35 | 37 | 5 | 77 |
| | % | 0 | 0 | 45 | 48 | 6 | 99 |
| High (21-50%) | | | | | | | |
| | Number | 0 | 0 | 0 | 268 | 104 | 372 |
| | % | 0 | 0 | 0 | 72 | 28 | 100 |
| Very High (over 50%) | | | | | | | |
| | Number | 0 | 0 | 0 | 0 | 138 | 138 |
| | % | 0 | 0 | 0 | 0 | 100 | 100 |

_Note_. One low to moderate poverty and one high poverty district are excluded because they are one-school districts.

## Table A-7

### District Poverty Levels as Measured by District's Chapter 1 School Selection Data Source and by 1980 Orshansky Index Data

| District Code | District Poverty Level: Based on School Selection Data Source | District Poverty Level: Based on Orshansky Index, 1980 |
|---|---|---|
| C1 | 54 | 14 |
| D1 | 36 | 20 |
| D2 | 28 | 18 |
| G1 | 14 | 16 |
| L1 | 30 | 20 |
| L2 | 18 | 5 |
| O1 | 34 | 16 |
| P2 | 26 | 11 |
| R1 | 37 | 14 |
| S1 | 59 | 30 |
| S2 | 53 | 8 |
| S3 | 20 | 8 |
| C2 | 3 | 4 |
| S4 | 1 | 6 |
| B1 | 19 | 14 |
| M1 | 78 | 52 |
| E1 | 10 | 7 |
| H1 | 15 | 6 |
| C4 | 41 | 32 |
| C5 | 23 | 10 |
| S5 | 23 | 14 |
| M2 | 40 | * |
| S6 | 17 | 5 |
| B2 | 31 | 8 |
| H2 | 72 | 73 |
| O2 | 88 | 63 |
| J1 | 8 | 2 |
| P1 | 6 | 17 |
| J2 | 78 | 50 |
| M3 | 25 | * |

*Data not available.

## Table A-8

## Multiple Correlations and Beta Weights for Factors Used to Predict Chapter 1 Participation

| | | Reading NCE Score: | | Participation In: | | | | |
|---|---|---|---|---|---|---|---|---|
| District | Multiple Correlation | Non-Special Education | Special Education | Lunch | Spec. Educ. | Bilingual | State Comp. Educ. | LEP |
| C1 | .51 | -.015 | -.004 | .021* | -.615 | | | |
| D1 | .58 | -.015 | -.006 | .047 | -.637 | .014[a] | | |
| D2 | .53 | -.005 | | .014* | N/A | | .461[a] | |
| G1 | .40 | -.008 | -.001 | .051 | -.512 | | -.187 | |
| L1 | .60 | -.014 | -.007 | .029 | -.390 | | | -.053** |
| L2 | .63 | -.017 | .000 | -.0226[a] | -1.188[b] | | | |
| O1 | .61 | -.012 | -.004 | .0240 | -.546 | -.228 | | |
| P2 | .44 | -.010 | -.002 | N/A | -.317 | -.084 | | |
| R1 | .30 | -.004 | .000 | .0390 | -.284 | .173 | -.013 | |
| S1 | .57 | -.015 | -.012 | .039 | -.220 | | | |
| S2 | .59 | -.136 | -.048 | .018* | -.129 | | | .045** |
| S3 | .50 | -.011 | | .0575 | N/A | -.123 | | -.001[a] |

_Note_. Except as mentioned below all other beta weights are statistically significant p<.0001.

*Significant at p<.05.

**Significant at p<.01.

[a] Not statistically significant.

[b] Special education physical only.

N/A means data were not available.

## Table A-9

## Number and Percent of Educationally Deprived Not Participating in any Categorical Program who Scored Within 5 NCEs of the District's Cutoff Score

| District Code | Number Eligible and Unserved | Student Within 5 NCEs of Cutoff | | Cutoff Score |
|---|---|---|---|---|
| | | Percent | Number | |
| C1 | 670 | 61 | 367 | ≤ 42 |
| S1 | 2,332 | 41 | 956 | ≤ 45 |
| D2 | 1,569 | 45 | 706 | < 50 |
| G1 | 215 | 61 | 131 | ≤ 40 |
| S3 | 820 | 35 | 287 | < 50 |
| R1 | 344 | 41 | 141 | < 36 |
| P2 | 631 | 39 | 244 | < 45 |
| 01 | 619 | 46 | 286 | ≤ 35 |
| L1 | 612 | 53 | 323 | < 45 |
| S2 | 461 | 48 | 220 | < 39 |
| C4 | 289 | 28 | 81 | < 45 |
| 02 | 238 | 42 | 100 | < 50 |
| C2 | 40 | 40 | 16 | < 45 |
| Avg/Total | 8,840 | 44 | 3,858 | |

Note. Data are based on medium and large districts in the sample that used test scores primarily or test scores and teacher judgment to select students.

## Table A-10

## Number of Chapter 1 Students Scoring Above 50 NCEs, by District and Percent

| | | Students With Scores >50 NCEs | |
|---|---|---|---|
| District Code | Total Chapter 1 | Number | % |
| C1 | 1,318 | 57 | 4 |
| D1 | 7,474 | 48 | 1 |
| D2 | 6,218 | 2,426 | 39 |
| G1 | 404 | 50 | 12 |
| L1 | 781 | 5 | 1 |
| L2 | 634 | 23 | 7 |
| O1 | 1,970 | 7 | 0 |
| P2 | 1,160 | 182 | 16 |
| R1 | 648 | 20 | 3 |
| S1 | 5,699 | 11 | 0 |
| S2 | 2,332 | 195 | 8 |
| S3 | 958 | 107 | 11 |
| C2 | 44 | 7 | 16 |
| S4 | 53 | 23 | 43 |
| M1 | 920 | 78 | 8 |
| H1 | 162 | 11 | 7 |
| C4 | 459 | 1 | 0 |
| H2 | 56 | 9 | 16 |
| O2 | 205 | 0 | 0 |
| | 31,495 | 3,261 | 10% |

Table A-11

Number and Percent of Chapter 1 Participants Who Score up to 5 NCEs Above Their District's Cutoff Score

| District Code | Total Participants Above Cutoff | Students 5 NCEs Above Cutoff: | |
|---|---|---|---|
| | | Number | % |
| C1 | 194 | 118 | 61 |
| D1 | 568 | - | - |
| D2 | 2,426 | 896 | 37 |
| G1 | 151 | 66 | 44 |
| L1 | 6 | 1 | 17 |
| L2 | 33 | - | - |
| O1 | 80 | 52 | 65 |
| P2 | 380 | 138 | 36 |
| R1 | 144 | 92 | 64 |
| S1 | 252 | 239 | 95 |
| S2 | 556 | - | - |
| S3 | 107 | 53 | 50 |
| C2 | 12 | 5 | 42 |
| S4 | 23 | 7 | 30 |
| M1 | 132 | 62 | 47 |
| H1 | 53 | - | - |
| C4 | 24 | 23 | 96 |
| H2 | 16 | - | - |
| O2 | 0 | 0 | 0 |
| | 3,905 | 1,752 | 45% |

# APPENDIX B

## Selection of Sites

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The original design for this study calls for a case study of 30 districts that show variations with respect to size, geographical location, urbanicity, percent poverty, grade levels of Chapter 1 program, and other related factors. Nationally, almost three-quarters of the districts receiving Chapter 1 funds are small and only 5% are large or super large (see Table B-1), so a representative, stratified sample was not possible with only 30 sites if any other variations, such as percent poverty, were to be considered. The decision was made to identify cells according to district size and urbanicity and to assign a number of sites per cell so that some variation in poverty, location, and grade levels would be included. While large districts are overrepresented with respect to their percent of the total, this method allows for several case studies within each cell. Table B-2 shows the number of districts included in each cell.

Table B-1

Percent of Chapter 1 Districts Nationally

| | |
|---|---|
| Small | 73% |
| Medium | 22% |
| Large | 4% |
| Super large | 1% |

Table B-2

Number of Districts in Sample by Enrollment Size and Urbanicity

| | Urbanicity: | | | |
|---|---|---|---|---|
| Size | Urban | Suburban | Rural | Total |
| Super large | 4 | | | 4 |
| Large | 8 | 2 | | 10 |
| Medium | 2 | 2 | 3 | 7 |
| Small | | 2 | 3 | 5 |
| Very small | | 2 | 2 | 4 |
| Total: | 14 | 8 | 8 | 30 |

## Identifying Potential Sites

Potential sites were nominated in a number of ways. Some sites were recommended by Advisory Panel members or others connected directly with the study. A national membership directory of the Directors of Research and Evaluation was consulted for larger sites. All of the Chapter 1 Technical Assistance Centers (TACs) were asked to provide nominations in their regions. Many state educational agencies (SEAs) were called and were particularly helpful in locating smaller sites. Finally, SEA directories of school districts, and other lists of school districts were consulted. With the aid of all of these sources, calls were made to LEAs in every state except Alaska.

Before any sites were contacted, the Director of Chapter 1 OERI studies, wrote to the Chief State School Officer in each state explaining the purpose of all the studies and requesting that a state contact be identified. In states where the SEA was telephoned, the identified contact was frequently the source of site nominations.

The first step in contacting a potential site was a telephone call from project staff. The purpose of the call was to obtain information about data available from the site and to gauge the site's willingness to participate in the study. Calls were made to over 200 school districts in the continental United States and Hawaii.

Descriptive information obtained from each potential site included LEA population, grade levels served by Chapter 1, urbanicity, and existence of other programs such as state compensatory education or programs for LEP students. In addition, detailed questions were asked about the kind of student information available. The minimum information needed for the purposes of the study included:

- district-wide achievement data;
- identification of Chapter 1 participants; and
- identification of low-income students individually or as a percent of each school's population.

At this point, key individuals were identified by name such as the Chapter 1 director, the person responsible for districtwide student records, and the individual to whom we should address the request for the district to participate in the study.

## Ranking Sites

Based on the telephone interview, the appropriateness of each site was evaluated. For large districts, computerized achievement files were a prerequisite to participation. Sites with computerized lists of Chapter 1 participants and student-level computerized poverty information were more desirable than sites with paper files or sites with only school-level poverty data. However, it was not possible to find optimal conditions in all sites, and paper files could be handled for small numbers of students. It was rare to find computerized records for districts with enrollments below 2,500 students. Suburbs, even if they were large, tended to be less automated than urban districts. Finally, many districts had combinations of computerized and paper files. It was necessary to consider all of these factors in evaluating each district.

Potential sites were sorted into three categories--highly desirable, possible, and not adequate. Highly desirable sites were listed in their appropriate cells. The entire list was examined for geographical representation. Final selections were made with the intention of reflecting diversity on characteristics such as presence of state compensatory education, participation of private schools, and grades of Chapter 1 participation. Additional calls were made to fill any perceived gaps in district characteristics.

# APPENDIX C

## Procedures Involved in the Preparation of the District Data Sets

## Introduction

Data for this study were received from thirty school districts across the country. Each of the data sets was unique, not only in content, but also in format. Data were received on magnetic tapes, floppy disks, and paper, yet all data were analyzed on the IBM-3084 mainframe computer at Stanford University. Prior to beginning analysis, the data had to be put on disks of the 3084 system, then carefully checked for errors and cleaned accordingly. The processes of file construction and cleaning are described in this appendix.

## Requesting the Data

### Establish Contact

As part of the process by which districts were selected for this study, each prospective district was screened concerning its quantitative data. Only districts that indicated fairly complete data bases during the screening process were invited to participate (see Appendix B of this report for a complete discussion of the selection process).

During this same period of time, we constructed a preliminary "wish list" of variables. This list included key variables (those variables without which analysis could not be undertaken), and desirable but nonessential variables. The first category contains such variables as Chapter 1 participation and test scores for each student; the second, ethnicity, age, and sex. Table C-1 presents the variable list.

Once a district had agreed to participate in the study, we telephoned the persons who were responsible for the relevant data. This telephone call had three main purposes: (a) to establish contact with the persons responsible for the quantitative data at the district and to familiarize them with the study; (b) to verify that the district had data we could use (prior contact during the screening process had not

## Table C-1

## List of Variables

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I. For each student currently enrolled in grades ____ through ____ :

A. Demographic data

School enrolled for 1985-86
Grade level in 1985-86
Date of birth
Race
Sex
Limited-English-proficient. Use most recent data available. May be dichotomous variable (LEP or not LEP). May be variable with several codes (e.g., 0 = fluent English, 1 = limited English, 2 = Non-English speaker or a score on a language proficiency test).

B. Program participation in 1985-86

Chapter 1 participant. May be dichotomous variable (Chapter 1 participant or not). May be one variable with several codes (e.g., 0 = not Chapter 1, 1 = Chapter 1 reading, 2 = Chapter 1 math, etc.) May be a series of dichotomous variables (e.g., participant in Chapter 1 reading program or not, participant in Chapter 1 math program or not, etc.).
Special Education Program participant. May be dichotomous variable or coded by type of handicap.
State Compensatory Education Program participant
Bilingual Education Program participant
Migrant Education Program participant

C. Program participation for 1984-85

Chapter 1 participant 1984-85

D. Achievement and poverty status

Standardized test scores. Achievement test scores for spring 1985. NCEs preferred. If not NCEs, national percentile ranks. Separate scores for reading, mathematics, and language arts by subtest (e.g., vocabulary, reading comprehension, etc.) or total battery (e.g., total reading, total math, total language arts).
Poverty status. For 1984-85, participant in National Lunch Program or recipient of AFDC. May be dichotomous or may be more detailed (e.g., 0 = non-participant, 1 = free lunch, 2 = reduced-price lunch).

II. For each school in the district:

| | |
|---|---|
| Chapter 1 school 1985-86 | May be dichotomous variable (e.g., Chapter 1/not Chapter 1) or listing of school identification codes for those schools with Chapter 1 programs. |
| Chapter 1 school 1984-85 | |

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always been with the people actually responsible for the data); and (c) assuming the district indeed had usable data, to discuss the specific form of the data and variables.

Points a and b bear further elaboration. Our goal was to receive all quantitative data necessary to simulate a district's school and student targeting practices for the 1985-86 school year. At a minimum, such a data set would include Chapter 1 and other program participation variables for the 1985-86 school year, and test scores and poverty data used by the district to select schools and students for Chapter 1 services for the same year. In most cases, this meant that test scores and poverty data were from the spring of 1985.

Each district had already indicated that it had the relevant data; the issue was whether the district had the data in a form that was usable for the present study. Clearly, the best possible case would have been a district with all data relevant to Chapter 1 for the 1985-86 school year in a form that was readable on the IBM-3084. However, the purpose of the discussion was to determine if there were viable alternatives when data were not available in that form. A few possibilities envisioned were:

1. No complete data base relevant to Chapter 1 selection for the 1985-86 school year, but a complete data base for 1984-85 on an IBM or compatible system;
2. Some combination of data readable on the IBM mainframe (magnetic tapes), and data on other media (floppy disks and/or paper files);
3. Data on magnetic tapes from systems that were not IBM-compatible.

We could accommodate the first of these situations by changing the focus year to 1984-85. This would present no problem from the technical standpoint, although substantively it would be less than optimal. In the second and third cases, careful discussion with the districts would be necessary to determine whether the files could be converted to 3084-readable form, and if so, the amount of work that would be involved.

We obtained the following information for each district:

- Year for which data were available. As we anticipated, several large districts did not have data pertaining to Chapter 1 participation for the 1985-86 school year, but did have data pertaining to the 1984-85 school year.

- Grades for which data were available. In most participating districts, standardized test data were available for only a subset of grades and Chapter 1 serves only a subset of grades. These two subsets were not necessarily identical.

- Variables available. The list of variables included a set of variables that were necessary to perform analyses for districts that used test scores as the sole criterion for selecting students. For each district, it was necessary to determine whether additional variables were needed to simulate targeting, and, if so, if they were available on the data base. An example of such a variable is teacher rating. At the same time, we asked district staff whether the district could provide other variables that might be important for the study. These might include type of Chapter 1 services received (e.g., reading, math, or both), specific handicap for special education students, and demographic variables.

- Form of the data (magnetic tapes, floppy disks, paper files). In general, for large districts, it was crucial that all data be in machine-readable form, as hand coding of paper files would have been too costly. For smaller districts, there was more latitude; floppy disks from virtually any system or paper files were acceptable.

We asked all districts whether data would be provided in a single data file, or more than one file. When the latter was the case, it was essential to insure that each file would contain a common student identifier (usually a student ID number). This identifier would be necessary to merge the files, since we requested that no names of students be on the files. If a district anticipated providing more than one file, and one or more of the files did not have a common student identifier, we ascertained the size of the files without the identifier. If they were small, a coder could be paid by the study to add the student identifiers at the district. However, if they were large, the time and expense would be prohibitive.

## Formally Request the Data

After these discussions had been held with a district, we wrote the district formally requesting specific data and documentation. The letter for each district requested data on different variables because of two factors: first, some districts had programs or types of students that the others did not (e.g., state compensatory education programs, LEP students); second, even districts with the same types of students and programs varied as to the form in which data were kept (e.g., districts with LEP students might or might not have LEP data in a form that was usable for this study). The letters also differed as to the grade bands for which data were requested. In most cases, we requested data at all grades that had test scores. A copy of this letter is included as Attachment 1.

Districts furnishing data on magnetic tapes were asked to provide certain documentation. Forms for documentation of the data and of the data files were attached to the letter.

Note that in the letter and attachments, the only requirement concerning the data is that it be furnished in "raw" form. This was to insure that data would be readable on the IBM-3084 regardless of the system on which it was written. It was clear that lack of other constraints would result in a substantial increase in work for us since each district's data base was unique. Nevertheless, specification of a uniform format would have been extremely burdensome for some districts, and our overriding consideration was minimize this burden.

## Data File Construction

### Review the Documentation

Data and documentation were received from districts as each site visit took place. Data came in every possible combination of magnetic tapes, floppy disks, and paper files, although large districts tended to have data on magnetic tapes written by mainframes, while small districts tended to have all paper files. Few districts had data on floppy disks.

While the media on which the data were written varied across districts, the data files documentation themselves varied much more. The data varied greatly as to format, and both the data and documentation varied as to completeness.

The first steps in file construction were to examine the data and the documentation carefully, to obtain any missing information or data, and/or to resolve any inconsistencies before proceeding.

Since documentation is the key to reading or understanding any data, the documentation was examined first for the following:

1. Did the documentation appear to be complete? In several districts, documentation was extremely scanty. For instance, in one district, documentation for a file on a magnetic tape

consisted of a mere list of variable names and their positions (fields). No explanation of variable names (some of which were quite cryptic) was provided, nor were value codes. We obtained this information only after telephoning the district several times.

2. Did the documentation indicate that the district had neglected to send any essential variables? In several cases, it did. For instance, in two cases district data files contained no data on Chapter 1 participation--the key variable to the study. We requested further data or replacement data sets from these districts.

3. Was the documentation understandable? As indicated above, documentation furnished by districts varied tremendously. For most districts, it was fairly short and straightforward; however, for several districts, it was quite lengthy and/or complicated. In these cases, we maintained close contact with the district until all ambiguities were resolved.

   For instance, the documentation sent by one district was lengthy and complicated. The length was the result of a highly complex data structure in which one format applied for a particular set of grades, while other formats applied for other sets of grades--all within the same data file. Furthermore, meanings of values for a given variable varied across grades. For example, column 67 was the handicap code for grades 2 and 3; but for grades 4, 5, 7, and 10, it indicated whether a student received free or reduced lunch. And for grades 2 and 3, a value of 5 for a particular state compensatory education program meant that a student was in the reading program; for grades 6, a value of 5 meant that a student was not eligible for the program. This was one of the areas in which multiple contacts with the district were required to unravel the documentation in order to proceed with reading the data.

## Examine the Data

Magnetic tapes. Data cannot be read from magnetic tapes without knowledge of the characteristics of the tape. The documentation supplied by districts that sent magnetic tapes usually contained this information. However, one district had expressed uncertainty about the number of files on their data tape.[1] Furthermore, characteristics of labels on magnetic tapes written by various operating systems and hardware can vary in obvious ways (IBM standard, ANSI, or no labels), and in less obvious ways (for instance, whether or not a tape has header and footer labels). Almost any documentation would indicate the former, but even the most complete documentation would not necessarily indicate the latter.

These uncertainties made necessary a preliminary step before actually reading the data. This step was to read the data using a utility that was developed at Stanford University to examine "mystery tapes." TAPESNIF provides information on such characteristics as density, type of labels, number of files, and number of records in each file (for labeled tapes). Another extremely useful feature of TAPESNIF is that it dumps several records from each data block in alphanumeric characters and the corresponding hex code. (For unlabeled tapes, a logical record length of 80 and a block size of 32,760 are assumed.)

As indicated above, we had requested raw data from the districts. When the data on a tape were indeed raw, the alphanumeric dump was readable, and could be examined to determine whether the format given in the documentation was correct. For most tapes, this was the case, and the data could be read using the format supplied by the district and information from TAPESNIF. However, for two files the printouts contained only unprintable characters. For one district's data, this signaled a problem that was time-consuming and difficult to resolve. Lengthy and detailed examination of the hex code along with the district's printout revealed that the data were in 7-bit characters stored in 36-bit words (while the IBM system uses 8-bit characters). A complicated skipping pattern was necessary to read the data properly.

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[1] The district told us that they had tried to write three files on a tape, but were uncertain as to whether there were indeed three files or only one. Furthermore, when they tried to make a backup copy of the tape prior to sending it, they were not able to read the tape on their own machine.

The other unreadable printout pertained to a file containing a district's test score data. In this case, examination of the hex code showed that the reason the printout was unreadable was that the data were in unsigned packed decimal format. Since this format could be read by SAS, the software that was to be used for the analysis, there was actually no problem.

Floppy disks. Three districts sent data on floppy disks. Two of them sent IBM-compatible disks. These data were examined on a micro-computer, and uploaded to the mainframe with no problems.

The procedure for the third district's data was more complicated. The disks had been written by a micro-computer that is virtually obsolete. They could neither be read by any micro-computer nor be converted by any utility available to us. After much searching, we located a service bureau that was able to translate three of the four disks to IBM-compatible disks. However, the fourth disk was returned to us as untranslatable because of problems on the disk. Additionally, when we examined the data on the IBM-compatible disks, it was clear that some of the records had been garbled. Fortunately, the district had provided complete paper files along with the floppies. Using these paper files, data that were missing or garbled on the floppies were punched. Once the punched data and the data from the floppies were uploaded, they were merged, resulting in a complete data set.

**Paper files**. We scrutinized paper files to see that they were complete, contained the expected number of cases, and made sense. Any problems were resolved on a case by case basis. For example, one district had sent test data only for Chapter 1 students. We later obtained test scores for students who were not Chapter 1 participants only for some grades. Once we determined that the data were complete and correct, we assigned a format for the file, and had the data punched and uploaded to the mainframe.

### Clean the Data

**Test for duplicates**. Data files should have contained one and only one record for each student. Early experience showed that data files were likely to contain some duplicate records. Therefore, when a file contained a unique identifier for each student (such as an ID number), the first step in the cleaning process involved testing for duplicate records. In general, we did this by sorting the data by student ID and then running a FORTRAN program that printed out records containing any student ID that occurred more than once in the data.

Data from only two districts contained large numbers of duplicate records. For one site we were able to select the appropriate records by using the school and enrollment codes. In the other case, there were over 50 pairs of duplicates, and none of them was salvagable. Documentation supplied by the district included output of the program that had produced the data file. The output indicated that the file supplied to us had been produced by merging other district files that contained duplicate IDs. Under these conditions, there is no logically correct way to match duplicate records, and records produced by a merge are not reliable. Therefore, duplicate records were deleted.

**Read the data with SAS and construct a SAS file**. Up to this point, with the exception of the student identifier, the data had been read only as a meaningless string of 1-byte characters. Now we read the data as actual variables using the format supplied by the district, and constructed a file (a SAS file) for analysis using the SAS software package.

We had checked the data in several ways prior to this step, and for most districts, we constructed a SAS file. However, in several instances SAS indicated that the data were invalid for the format specified. In one instance, this was due to garbled data midway through a file containing over 27,000 records. (Fortunately, the file contained only data that were not essential to the study, since the data could not be recovered.) In another instance, this was merely a sign that there were nonnumeric characters in data that the computer was attempting to read as numeric. Once we determined the appropriate format by rechecking the hex dump, we were able to proceed.

Clean any remaining problems. Once a district's data were in a SAS file, descriptive statistics were computed. We scrutinized these statistics carefully because when descriptive statistics deviate greatly from expectations, it is often a sign that something is wrong with data or a program. For most districts, the descriptive statistics looked fine. Indeed, several districts had furnished descriptive statistics for their data with which ours could be compared. In each of these cases, comparisons confirmed that there were no problems.

When values seemed peculiar, we rechecked documentation and data dumps. Problems signaled by descriptive statistics fell into several major categories.

Variables dropped. In several cases, peculiar values were the result of format errors in the documentation supplied by districts that had not been evident from the TAPESNIF output. For example, descriptive statistics indicated that there were no special education students in one district, although, according to the district's documentation, there should have been. The documentation indicated that special education students should have a nonblank character in a particular field, while for students who were not in special education, the field should be blank. However, the descriptive statistics indicated that the field was always blank. Rechecking the alphanumeric dump of the raw data against the format supplied by the district showed that the column indicated as special education on the documentation was always blank, while the adjacent column had values that were consistent with the special education variable per the documentation. In these cases, we simply reread the data using the correct format.

In one case, careful checking of descriptive statistics pointed to bad data. The descriptive statistics for a district's 1985 reading and math test scores were identical, as were Chapter 1 participation variables for 1984-85 and 1985-86. It was highly unlikely that these identical variables could have been coincidental. Further analysis showed that the variables were identical for every student. When we informed the district, they rechecked their programs and discovered that one test score had mistakenly been written on the tape for both variables, and the other had not been written at all. They advised which test score was valid. At the same time they informed us that the Chapter 1 data for 1985-86 were indeed identical to the 1984-85 Chapter 1 data because the district's standard operating procedure is to carry forward the data from the prior year and then edit the file as necessary, changing data for students who had been added to, or dropped from the program. The data supplied to us had not yet been edited.

The final usable data set from this district contained a reading test score and a Chapter 1 participation variable for 1984-85, but grade and school variables for 1985-86. (Accurate data on grade and school were essential to the analysis because the district offered Chapter 1 services in only a subset of the district's schools and grades, and it was important to be able to differentiate between school targeting, grade band selection, and student targeting as reasons that a given student was not receiving Chapter 1 services.) Analyses could be performed only after making several assumptions, such as the promotion of every student from one grade to the next and that no students had changed schools.

We dropped another variable from the same data set when descriptive statistics showed only 151 people in special education out of a total district enrollment of 10,878. This did not seem credible, so the variable was dropped from the analysis.

Grades dropped. Table C-2 presents information about grade levels for which data were requested, received, and considered useable, along with the grade bands served by Chapter 1 for each district. As stated above, we attempted to construct a file containing all students in the district with test scores used for Chapter 1 selection for the "current" year. If a district had tested grades 2-8 last year, we requested data for students who were in grades 3-9 this year. Additionally, we requested data for students who were currently in the lowest grade that was tested the previous year (grade 2 in this example) to insure that no student with a test score was omitted from the data set because he or she had been retained in grade.

Subsequently, we dropped grades from the analysis for several reasons. Upon further consideration, analysis of the students in grades in which only retained students had test scores seemed to present a biased picture of a district's practices, since the numbers were small and all the test scores were low. Comparisons of mean test scores of Chapter 1 and non-Chapter 1 students would not be representative of the district's practices.

In other cases, although the district had indicated that particular grades had test scores, few or no test scores were available on the data file. Besides the sparse data for the lowest grade requested, data were either sparse or missing for grade 11 in D2, grade 1 in B2 and P1, and grades 1-3 in J1. Such grades were dropped.

## Table C-2

## Grade Levels for Which Data Were Requested, Received, and Usable and Grades At Which Chapter 1 Operates, By District

| District Code | Grades Requested | Grades Received | Usable Grades[a] | Grades Chapter 1[b] |
|---|---|---|---|---|
| C1 | 4-9 | 4-9 | 4-9 | K-8 |
| D1 | K-12 | 1-6 | 2-6 | 1-6 |
| D2 | 3,5,8,11 | 3,5,8,11 | 3,5,8 | PreK-12 |
| G1 | 2-11 | 4-10 | 4-6,8-10 | 3-12 |
| L1 | 2-10 | 2-10 | 2-10 | K-5 |
| L2 | 2-10 | 2-10 | 2-6 | K-6 |
| O1 | 1-9 | 1-9 | 1-9 | 1-8 |
| P2 | 3-9 | 3-8 | 3-8 | K-12 |
| R1 | K-12 | K-12 | 2-11 | K-12 |
| S1 | K-12 | K-12 | 1-12 | K-8 |
| S2 | 2-12 | 2-12 | 2-6 | K-6 |
| S3 | K-12 | K-12 | 2-5 | K-8 |
| C2 | 3-8 | 3-8 | 4-8 | K-8 |
| S4 | 3-9 | 3-9 | 4-9 | K-8 |
| B1 | K-8 | K-8 | 1-8 | K-6 |
| M1 | 2-12 | 2-12 | 2-6* | 2-12 |
| E1 | K,2,4,6 | K-5 | 1,3,5 | K-6 |
| H1 | 7-12 | 7-12 | 7-8 | 7-12 |
| C4 | 1-12 | 1-8 | 2-7 | K-8 |
| C5 | 1-8 | 2-9 | 2-9 | 1-9 |
| S5 | 2-9 | 2-9 | 2-9 | K-8 |
| M2 | K-12 | K-6 | 1-6 | K-8 |
| S6 | 1-6 | 1-6 | 2-6 | 1-6 |
| B2 | K-9 | 1-8 | 2,4,6,8 | K-8 |
| H2 | K-12 | 2-9 | 4-9 | K-9 |
| O2 | K-12 | K-10 | 1-10 | K,4-8 |
| J1 | 2-12 | K-12 | 4-12 | K-6 |
| P1 | K-9 | K-6 | 2-6 | K-12 |
| J2 | K-12 | 1-8 | 1-8 | K-8 |
| M3 | K-9 | K-8 | K-8 | K-8 |

---

[a] "Usable" means that individuals have at least test scores, and a Chapter 1 participation variable.

[b] Reading and/or math programs.

*Test scores available for 2-12, but Chapter 1 variable only good for grades 2-6.

In one district, a problem was signaled when descriptive statistics showed that no seventh graders had valid test scores. Examination of the data sent from the district showed that data on sixth graders had been omitted from the data file containing test scores. Since the "current" year was the year following the test, all test scores for seventh graders were missing. Consequently, they were dropped from the analysis.

Variables other than test scores could also cause a grade to be considered unusable. One district's Chapter 1 participation data were not reliable above grade 6, according to the district. Another district indicated that lunch data were not reliable above grade 5.

In one case, we dropped certain grades from our analyses because of lack of documentation. In our analyses we converted all test scores to NCEs for comparability. This district furnished test scores that were not in NCEs and could be converted to NCEs using special tables that only the district could provide. The district sent the tables for only a subset of grades. Thus, we were unable to analyze data for the other grades.

Schools dropped. We dropped all observations with particular school codes because the schools were in some way special or were not actually schools at all. These included schools that were exclusively for special education students, adult education facilities, and hospitals. The data were often sparse for students in these facilities, but more importantly, we dropped them because they were not included by districts in their targeting for Chapter 1.

## Final Data Files

Table C-3 shows the variables in each district's data file. The goal of constructing an analyzable data file containing Chapter 1 participation data for the current year and the relevant selection data was met for all 30 districts, with a few minor exceptions.

## Table C-3

## Variables in the Data Base by District

| District | Current* School | Current Grade | Ethnicity | Sex | Age | Current Ch. 1 | Breakdowns | Last Yr. Ch. 1 | Breakdowns | Current Spec. Ed. | Breakdowns | Current LEP | Breakdowns | Current State Comp. Ed. | Breakdowns | Current** Standardized Test Scores |  |  |  | Retain | Move | FRL by Student | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Rdg. | Math | LA | Other |  |  |  |  |
| B2 | X | X |  |  |  | X | reason not in, full or part | X | reason not in, full or part | X | setting |  |  | NA |  | X | X | X |  |  |  |  |  |
| C5 | X | X | X | X | X | X |  | X |  | X | LD, EM not all | X |  | NA |  | X | X | X | X |  |  | X |  |
| E1 | X | X |  | X | X | X | intensity | X | intensity | X | setting | X |  | NA |  | X | X | X |  | X | X |  |  |
| M2 | X | X | X | X | X | X | R,M,L | X | R,M,L | X |  |  |  | NA |  | X | X | X |  |  |  | X |  |
| M3 | NA | X |  | X | X | X |  |  |  | X |  |  |  | NA |  | X | X | X |  |  |  | X |  |
| P1 | NA | X | X | X | X | X | R,M | X | R,M | X | some HCD |  |  | NA |  | X | X |  |  | X |  | X |  |
| S5 | X | X | X | X | X | X | R,M | X |  | X | SPH or LD | X | pri. lang. | NA |  | X | X |  |  |  |  | X |  |
| D1 | X | X | X | X | X | X | dist only has R program | X | dist only has R program | X | dummy | X | dummy for bil. prgrm. | X |  | X | X | X | X | X |  | X | stu. conduct files available |
| S4 | X | X | X | X | X | X | dummy |  |  | X | dummy | X | dummy |  |  | X | X | X | X | X |  |  |  |
| S3 | 1986 school | X | X | X | X |  | (unusable) | X | R,M,B |  | (unusable) | X | LEP and bil. pgrm. dummies | NA |  | Spr 86 |  |  |  |  |  | X 1986 |  |
| C1 | X | X | X | X | X | X | R,M | X | R,M,B | X | type of hcap |  |  | X | dummy | X | X |  |  | X |  | X |  |
| B1 | X | X |  | X |  | X | dummy |  |  | X | SC or resource room | X | dummy | X | dummy | X | X | X | X | X |  | X | gifted |
| L2 | X | X | X | X | X | X | R,M | X | R,M,B | X | type of hcap |  |  | NA |  | X | X | X | X | X |  | X | teacher rating for R & M |
| S1 | X | X | X | X | X | X | R,M | X | R,M,B | X | type of hcap type of service |  |  | NA |  | X | X | X | X | X |  | X |  |
| G1 | X | X | X | X | X | X | R,M | X | R,M,B | X | dummy |  |  | X | R,M,B | X | X | X | X | X |  | X | gifted |
| S2 |  |  | X | X | X |  |  | X | R,M,B | X | service received | X | dummy | NA |  | X | X | X | X | X |  | X | attendance, teacher rating |
| H2 | X | X | X | X | X | X | R,M,BASIC,ECI | X | dummy |  |  |  |  | NA |  |  |  |  |  | X |  | X | tchr, CHI tchr rating; composite rating score |
| L1 | X | X | X | X | X | X | R,M | X | dummy | X | type of srv. | X | pri. lang. | X | dummy | X | X | X | X | X |  | X | gifted |
| M1 | X | X | X | X | X | X | R,M | X | R,M,B | X | type of hcap | X | LEP and bil. prgrm. | X | R,M,B | X | X | X |  | X |  | X | migrant |
| C2 | X | X | X | X | X | X | dummy |  |  | X | dummy | X | ESL dummy | NA |  | X | X | X | X |  |  |  |  |
| O1 | X | X | X | X | X | X | detailed, incl. R,M | X | R,M | X | type of hcap | X | LEP and bil. prgrm. | NA |  | X | X | X | X |  |  | X |  |
| R1 | X | X | X | X | X | X | R,M,Bil,ESL | X | R,M,bil.,ESL | X | type of srv. type of HCAP | X | LEP and bil. pgrm. | X | R,M | X | X | X |  |  |  | X | attendance |
| D2 | X | X | X | X | X | X | dummy | X | dummy |  |  |  |  | X | dummy | X | X |  |  |  |  |  |  |
| H1 | X | X |  |  |  | X | dummy |  |  | X | type of HCAP | X | ESL pgrm. | NA |  | X | X |  |  |  |  |  |  |
| P2 | X | X | X | X | X | X | R,M,L |  |  | X | type of HCAP | X | Lau score, bil. pgrm., pri. lang. | NA |  | X | X | X |  |  |  |  |  |
| C4 |  | X | X | X |  | X | dist only has R program |  |  |  |  |  |  | NA |  | X | X | X | X |  |  | X |  |
| S6 | X | X | X | X | X | X | R,M | X | R,M | X | type of HCAP |  |  | NA |  | X | X | X | X |  |  | X | teacher rating R,M |
| O2 | X | X | X | X | X | X | R,M | X | R,M | X | dummy |  |  | NA |  |  |  |  |  |  |  |  | selection score |
| J1 | NA | X | X | X | X | X | R,M | X | R,M | NA |  | NA |  | X |  | X | X | X |  | X |  | X |  |
| J2 | X | X | X | X | X | X | dummy |  |  | X | type of HCAP | X |  | NA |  | X | X |  | X |  |  | X |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | X | X | X |  |  |  | X | Indian aid prgms., migrant |

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*For most districts, the "current" year is 1985-86, and "last" year is 1984-85. For district D2 and G1, "current" is 1984-85, and "last" is 1983-84.

**Test scores used for "current" year Chapter 1 selection.

Besides the problems indicated in the section on variables that were dropped, the most common deficiencies of the final data files involved problems with the Chapter 1 participation variable, teacher judgment, and poverty data.

## Chapter 1 Participation

Six districts that had separate Chapter 1 programs and separate student selection criteria for reading and math sent only one variable indicating whether a student was in Chapter 1 (any program) or not. There were two ways we could have handled this lack of data for our analysis, neither of them perfect. We might have considered a student eligible for Chapter 1 if both his reading and math scores were low. Alternatively, we might have considered a student eligible for Chapter 1 if either his reading or math score was low. In either case, simulations might be incorrect for people who had one high and one low test score, but in different ways. If the focus were on the reading program, the first strategy would make a district appear to have improperly targeted people with low reading scores and high math scores, while the second strategy would make the district appear to have improperly targeted students with high reading scores and low math scores. We chose to use the second strategy for this study, but results should be viewed with caution.

Poverty. Six districts were unable to furnish poverty data by student. It should be noted that during the preliminary screening process, it was clear that student-level poverty data were the most difficult data to obtain.

## Conclusion

This appendix has described the process by which data files from 30 districts across the country were put into a form that could be used for the analyses in this study. In presenting a detailed account of this process, much of the focus has necessarily been on the problems and difficulties involved in file construction and data cleaning.

The data existing within the files of school districts offer a rich source of information about schools, students, and program participation; the task of editing and standardizing unique data sets that have been designed to meet the information needs of their districts proved to be a time consuming one. The approach of using district data allowed us to capitalize on the data that were already available in the record keeping system of these 30 LEAs. Throughout the course of the study, personnel from the districts were extremely cooperative and helpful. For some districts, the task of constructing data files was quite heavy, yet the districts did a remarkable job of furnishing and documenting the data, and providing other useful information to accompany them.

## ATTACHMENT 1

Dear _____:

Im am writing you pursuant to my telephone conversation on (date) with _____ during which we discussed the content of your data files on students. The purpose of this letter is to confirm the characteristics of the data tape we hope to obtain from your district for the national Chapter 1 Targeting Study.

Our goal is to acquire data tapes from your district that will have information on students currently enrolled in the district for the 1985-86 school year. We are aware, however, that the most recent data available for some variables may be from the 1984-85 school year. For instance, the most recent achievement data for students in your district is for spring of 1985. We have expressed our preferences concerning the source time of each variable in Attachment A.

The variables of interest to us are listed in Attachment A. The list is meant to be flexible concerning the exact form of some of the variables. As a rule, we would prefer that you furnish us with data that are as fine-grained as possible. If your data are more detailed than those specified on the attached list, we would like to have the more detailed data. For instance, data for special education participants that is coded by type of handicap is preferred over a code that merely indicates that a student is or is not in special education. In any case, we will need a variable list and value labels.

We also realize that you may have other variables in your data base of which we are unaware that would allow us to make additional comparisons between Chapter 1 and non-Chapter 1 students. Should you have additional data that might be of interest to us, please include it or give us a call to discuss it. For example, the following types of information for Chapter 1 and non-Chapter 1 students would be useful:

- Household annual income
- Years of school completed by parents
- Disciplinary referrals
- Occupational category of parents. For instance, 0 = unemployed; 1 = unskilled; 2 = skilled workers; 3 = white collar; 4 = professional and managers
- Teacher judgment ratings of students considered for Chapter 1
- Attendance rates

## ATTACHMENT 1

(page 2)

Concerning the form of the data, we prefer to have formatted raw data files. Please do not write binary files. Tapes must be 9-track. Our preferences for file structure are in Attachment B. These preferences are slight and are meant as a guide only if it is just as convenient for you to use one specification as another. If this is not the case, however, write the tape in the way that is most convenient for you.

Enclosed are two forms for you to use in documenting the files. One completed File Description form for each file you write and one Tape Description form should accompany each tape.

We are also interested in obtaining any analogous data that the district may have for non-public school students. Even if data are available only for those non-public school students participating in Chapter 1, they would be useful for the purposes of our study.

A member of the project team from the Chapter 1 Targeting Study, _____, will be visiting the district (date). We hope that the data tape can be ready for him/her to pick up at that time. I will call you on (1 to 1-1/2 weeks before date) to answer any questions you may have about our data needs. In the meantime if you have any concerns, please do not hesitate to call me or Christine Wood, the project director (415/941-7084).

Sincerely,

## ATTACHMENT A--List of Variables

I. For each student currently enrolled in grades ____ through ____ :

A. Demographic data
School enrolled for 1985-86
Grade level in 1985-86
Date of birth
Race
Sex
Limited-English-proficient. Use most recent data available. May be dichotomous variable (LEP or not LEP). May be variable with several codes (e.g., 0 = fluent English, 1 = limited English, 2 = Non-English speaker or a score on a language proficiency test).

B. Program participation in 1985-86
Chapter 1 participant. May be dichotomous variable (Chapter 1 participant or not). May be one variable with several codes (e.g., 0 = not Chapter 1, 1 = Chapter 1 reading, 2 = Chapter 1 math, etc.) May be a series of dichotomous variables (e.g., participant in Chapter 1 reading program or not, participant in Chapter 1 math program or not, etc.).
Special Education Program participant. May be dichotomous variable or coded by type of handicap.
State Compensatory Education Program participant
Bilingual Education Program participant
Migrant Education Program participant

C. Program participation for 1984-85
Chapter 1 participant 1984-85

D. Achievement and poverty status
Standardized test scores. Achievement test scores for spring 1985. NCEs preferred. If not NCEs, national percentile ranks. Separate scores for reading, mathematics, and language arts by subtest (e.g., vocabulary, reading comprehension, etc.) or total battery (e.g., total reading, total math, total language arts).
Poverty status. For 1984-85, participant in National Lunch Program or recipient of AFDC. May be dichotomous or may be more detailed (e.g., 0 = non-participant, 1 = free lunch, 2 = reduced-price lunch).

II. For each school in the district:

| | |
|---|---|
| Chapter 1 school 1985-86<br>Chapter 1 school 1984-85 | May be dichotomous variable (e.g., Chapter 1/not Chapter 1) or listing of school identification codes for those schools with Chapter 1 programs. |

## ATTACHMENT B--Preferred Data and Tape Characteristics

| | Most Preferred | | Least Preferred |
|---|---|---|---|
| DATA TYPE: | EDCDIC | | ASCII |
| LRECL: | Any | | |
| RECFM: | FB | VB | VBS |
| DENSITY: | 6250 or 1600 BPI | | 800 BPI |
| LABELS: | IBM SL | NL | AL |

Tapes must be 9-track.

## FILE DESCRIPTION

File Name (DSN)________________________________ Page ___ of ___

For Magnetic Tapes Only:

If tape is labeled: File Seq (label) Number __________
If tape is NOT labeled: Lrecl__________ Blksize __________

| Relative Position | Data Name | Field Length and Type | Description (valid codes/ranges) |
|---|---|---|---|
| | | | |

## ATTACHMENT 1
(page 6)

## TAPE DESCRIPTION

Density: ________ bpi

Data type: ________ EBCDIC ________ ASCII

Labels: ________ IBM Std ________ ANSI Std ________ No labels

Recfm: ________ FB ________ VB ________ VBS

If tape is labeled: Vol Ser Name ______________________________________

# APPENDIX D

## Replicating Student Selection Procedures

A major goal of Chapter 1 is to meet the special educational needs of educationally deprived children. The program regulations define "educationally deprived children" as "children whose educational attainment is below the level that is appropriate for children of their age" (§200.3(b), 47 Federal Register 52344 (November 19, 1982)). Within the legal framework, districts are permitted a great deal of latitude as to how educational deprivation is measured and defined. Districts differ in the type of student selection model they use and in the cutoff score they use to separate those eligible for the program from the rest of the school population.

Selection models may be divided into five main categories:

- Test score alone--all students are tested. Those scoring below a cutoff point are served.
- Test score dominant--a test score is used to determine eligibility, and then a teacher rating (quantitative) or teacher judgment (qualitative) is used for selection from the pool of eligible students.
- Composite score--test scores are combined with teacher ratings or other information according to a formula. Students with a composite score below a cutoff point are served.
- Teacher judgment dominant--teachers determine which students should be tested. Of the students tested, those scoring below a cutoff point are served.
- Mixed--usually all students scoring below one cutoff are eligible. Students scoring between that cutoff and another higher cutoff are eligible only if teachers recommend them.

A set of analyses was performed in which the student targeting practices of a district were replicated as closely as possible, using the data supplied by the district. In these analyses, students were identified who were eligible to receive services based on the student selection model, measures, and cutoff score used by the district to determine which students were educationally deprived. Table D-1 presents the selection models used by each district. Note that all of

## Table D-1

## Models of Student Selection for Chapter 1 by District

| District | Test Only | Test and Teacher Judgment | Composite Score | Teacher Judgment and Test Score | Mix |
|---|---|---|---|---|---|
| Super Large | | | | | |
| C1 | X | | | | |
| D1 | | | | | X |
| D2 | | X | | | |
| G1 | X | | | | |
| Large Urban | | | | | |
| L1 | | | | | X |
| L2 | | | X | | |
| O1 | X | | | | |
| P2 | X | | | | |
| R1 | X | | | | |
| S1 | X | | | | |
| S2 | X | | | | |
| S3 | | | | | X |
| Large Suburban | | | | | |
| C2 | | X | | | |
| S4 | | X | | | |
| Medium Urban | | | | | |
| B1 | X | | | | |
| M1 | X | | | | |
| Medium Suburban | | | | | |
| E1 | | | X | | |
| H1 | X | | | | |
| Medium Rural | | | | | |
| C4 | | | X | | |
| C5 | | X | | | |
| S5 | | X | | | |
| Small Suburban | | | | | |
| M2 | X | | | | |
| S6 | | | | X | |
| Small Rural | | | | | |
| B2 | | | X | | |
| H2 | | | X | | |
| O2 | X | | | | |
| Very Small Suburban | | | | | |
| J1 | X | | | | |
| P1 | X | | | | |
| Very Small Rural | | | | | |
| J2 | | X | | | |
| M3 | | X | | | |

the models include a test score. However, the exact test score used varies from district to district. For instance, some districts use a total reading score as the measure of educational need; others use only the score on a reading comprehension subtest, and do not consider the vocabulary subtest; while still others use a total battery score that includes reading, math, and language arts. Cutoff scores also vary from district to district and sometimes within district by grade level or by subject matter, as shown in Table D-2. The replications were able to accommodate all such variations in student selection practices.

The replications for the 14 districts that use a test-score-dominant model and for the seven districts that use a test score-followed-by-teacher-judgment model involved similar procedures. In almost all cases the test information in the data base was the same as that actually used by the districts for their Chapter 1 selection. In our replications, students whose scores fell below the district cutoff score became the intended Chapter 1 target group and were coded as "eligible for Chapter 1."

Five districts in our sample select students based on a composite score (L2, H2, E1, C4, and B2). That is, all students below a certain score are eligible for Chapter 1, while those above the score are not. In general, composite scores are computed by combining test scores and teacher ratings or some other measure of student performance. The weight assigned to each factor varies from district to district; however, most often an attempt is made to weight each factor equally.

Data bases from two of the five districts (L2 and H2) contained sufficient information for us to follow their targeting procedures precisely. That is, the data from one district included the composite score, while the data from the other district contained the factors used in computing the composite score. We computed the composite score for the latter district using the same algorithm used by the district, including the assignment of weights and scaling of factors. For the

## Table D-2

## Test Cutoff Scores by District (in NCEs)

| District | | Highest Eligible Score |
|---|---|---|
| C1 | | 42 |
| D1 | | 49 |
| D2 | | 49 |
| G1 | | 39 |
| L1 | | 45 |
| L2 | | * |
| P2 | Grade 3 | 42 |
| | 4 | 43 |
| | 5 | 43 |
| | 6 | 42 |
| | 7 | 43 |
| | 8 | 41 |
| O1 | | 35 |
| R2 | | 36 |
| S1 | Grades K-3 | 46 |
| | 4-6 | 44 |
| | 7 | 41 |
| | 8 | 39 |
| S2 | | 38 |
| S3 | | 49 |
| C2 | | 44 |
| S4 | Grades 1-6 | 49 |
| | 7+ | 28 |
| B1 | | 42 |
| M1 | | 44 |
| E1 | | 34 |
| H1 | Grade 7 | 34 |
| | 8 | 28 |
| C4 | | 44 |
| C5 | | 35 |
| S5 | | 49 |
| M2 | | 49 |
| S6 | | 38 |
| B2 | | 44 |
| H2 | | * |
| O2 | | 49 |
| J1 | | * |
| P1 | | 44 |
| J2 | | 49 |
| M3 | | 44 |

*NCE could not be computed.

replications, we sorted students into "Chapter 1-eligible" and "not eligible" groups based on whether their composite scores were above or below the cutoff established by the district.

For the three districts (El, B2, and C4) that used composite scores for selection but whose data bases lacked some information essential for computing the scores, we used test score alone. These districts use test score data as one part of the composite. They assign different weights to students whose test scores are above or below a prescribed point (e.g., scores falling in the bottom three stanines are given two points and those above that are given only one point). We used these cutoff scores to assign students to the Chapter 1-eligible versus not-eligible categories in our replications.

One district in our sample (S6) uses teacher ratings to screen for potential Chapter 1 students, and then tests only those with the lowest ratings. The data base for this district contains the teacher ratings and the test scores of the lowest-rated students, in addition to scores on other tests that are administered districtwide. The selection practices for this district were easily replicated because all the needed data were available and could be applied in the proper sequence.

Three districts (L1, S3, D1) use two different student selection models at different test score ranges. We were able to match these practices in our replications. For instance, in one district everyone below the 25th percentile is served automatically, and those with percentile scores between 25 and 40 receive service only if they are referred by a teacher. The targeting of Chapter 1 services to students in these separate score ranges was analyzed separately as well as together.

Thus, the intended eligible pool for Chapter 1 was operationally defined according to the student targeting practices unique to each particular site, and differed from district to district. Clearly, although it is important to evaluate each district's targeting in light of its own definitions of educational deprivation, it is also desirable to make cross-district comparisons, or at least to know how commensurate districts' definitions of educational deprivation are. That is, do definitions of educational deprivation vary widely across districts, or are they similar? Since all selection models use a test score, the test score cutoff is helpful for this purpose. Table D-2 shows the cutoff test scores used by each district.

Although they vary from district to district, most cutoffs are between 40 and 50 NCEs. There is some clustering around the 35th NCE (25th percentile), 45th NCE (40th percentile), and again at the 49th NCE (49th percentile). Most of the districts that have higher cutoff scores also include some other measure (such as teacher judgments) in their selection process. That is, of the eight districts that have an eligibility cutoff at the 49th NCE, six actually select students based on teacher judgment or a composite score. In these districts the intent is to serve the lowest achieving of those students--the decision is simply not based on test score. Thus, in reality, despite the fact that districts establish their own criteria and these criteria vary, students defined as educationally deprived do not vary greatly across districts.

# APPENDIX E

## Simulation of a Change in District Targeting to Include Upper Grades

District D1 is a large urban district with enrollment of almost 100,000 students in Kindergarten through grade 12 and a district poverty level of 36%. It elects to fund schools at the elementary grades only (kindergarten through grade 6). The Chapter 1 program exists in 90 of 95 elementary schools, with 83 schools qualified under the 25% rule and the remaining seven under the formerly eligible option. District D1 could have a Chapter 1 program at grades K through 12, but elects not to. One reason for its choice is that a state compensatory education program operates at grades 7 through 12. Ignoring this for the moment, let us examine what would happen if District D1 were to target all grade levels for Chapter 1, including the middle and senior high schools.

Under current legislation, D1 can use at least three different methods of deciding which schools qualify for Chapter 1 services. Using the 25% rule, D1 can serve every school in the district with poverty over 25%, qualifying a total of 105 schools (assuming the grandfather clause is not invoked). It can qualify every school over the districtwide average percent poor, or every school over 36% poor. Since elementary schools tend to be the poorest, this would result in service to only eight middle schools and one high school. D1 can also use grade band averages, qualifying elementary schools over 46% poor, middle schools over 29%, and high schools over 15%. This strategy results in service at the fewest elementary schools and the most high schools. (These two different averaging methods are discussed in more detail in Chapter 3.)

Table E-1 shows the number of schools at each level that could legally qualify as Chapter 1 schools under each strategy. In our data base for district D1, there are 7,474 students in grades 2 through 6 served by Chapter 1. This amounts to an average of 83 Chapter 1 students per school. If we hold the total number of Chapter 1 students in the district constant, then using the 25% rule, Chapter 1 would serve an average number of 71 students per school. Using the districtwide percent, qualifying schools would serve an average of 100 students per school. Using grade band averages would result in service to 105 students per school. The distribution of the number of students served by Chapter 1 at each of these school levels under each condition is shown in Table E-2.

Table E-1

Number of Schools Qualifying for Chapter 1 Under Three Different School Targeting Strategies

| Strategy | Elementary | Middle | High School | Total |
|---|---|---|---|---|
| Total in District | 95 | 37 | 14 | 146 |
| 25% rule | 83 | 18 | 4 | 105 |
| Districtwide average % | 66 | 8 | 1 | 75 |
| Average % by grade band | 51 | 14 | 6 | 71 |
| Current Practice | 90* | 0 | 0 | 90 |

*Of the 90 schools, 83 qualify under the 25% rule and seven additional schools qualify under the formerly eligible option.

Table E-2

Number of Students Served at Each School Level Under Three Different School Targeting Strategies

| School Targeting Strategy | Elementary | Middle | High School | Total | Average Per School |
|---|---|---|---|---|---|
| 25% rule | 5,908 | 1,278 | 284 | 7,470 | 71 |
| District average % | 6,600 | 800 | 100 | 7,500 | 100 |
| Average % at each grade band | 5,369 | 1,470 | 630 | 7,469 | 105 |
| Current Practice | 7,474 | -- | -- | 7,474 | 83 |

The most radical change in the distribution of Chapter 1 student participation is produced by averaging within grade band. Six of the high schools qualify compared to one or four under other configurations. Under this school targeting strategy the total number of schools that qualify is the smallest, and the average number of Chapter 1 students per school is the highest. Compared with current operations, the Chapter 1 program in this simulation would (a) be spread across more grade levels (K-12 versus K-6), (b) be concentrated in fewer schools, and (c) serve more students within each school on the average.

The interaction of all of these changes in terms of the characteristics of the students that would be selected for Chapter 1 is very complex. The range and average percentage of poor students in District D1 is very different at each school level. For example, 66 of the 90 elementary schools have poverty levels higher than the poorest high school. By using grade band averages and serving six high schools, D1 would exclude 15 elementary schools with higher poverty levels than the six high schools made eligible under this method. While more senior high school students would receive Chapter 1 services in this situation, they would come from schools with much lower poverty levels and higher achievement levels than the elementary schools that would be excluded. This discrepancy in the percentage of poverty among the school levels is not unique to district D1, as we have shown.

As Table E-2 shows, if District D1 uses grade band averages, the number of Chapter 1 students in each school is the highest compared with the other strategies. Presumably this would mean that a higher cutoff score for eligibility would be used and that the average scores of Chapter 1 students would be higher. A computer simulation using D1's data base was carried out to compare the difference in the average achievement score of the lowest scoring 5,908 students in the poorest 83 elementary schools (simulating the 25% rule) to the scores of the lowest scoring 5,369 students in the poorest 51 elementary schools (simulating grade band average percent). As predicted, the students in the 51 school sample had a higher mean achievement score than those in the 83 school sample. Using grade band averages and keeping the total number of students in the program constant resulted in serving a higher-achieving group of elementary school students. In the first group the mean was 32.5 NCEs, compared to 30.2 NCEs. In the 51 school sample the scores of students ranged from 1 to 42 NCEs while in the 83 school sample the highest score was 38.3.

When the average scores of the selected students in each of the 51 poorest schools were compared under the two targeting strategies, every school consistently had a higher mean achievement level when grade band average percent was used to select schools. Serving 31 fewer elementary schools but more students per school meant that the program would be serving a higher achieving group. Thus even though the total number of students at the elementary grades is smaller, the group of elementary students that is served is not, on the average, educationally needier (i.e., lower scoring).

The effect of distributing the Chapter 1 program more evenly across the grade levels will affect the achievement level of Chapter 1 students both at the elementary grades and at the high school grades. Average achievement scores will increase if more students are served in fewer schools. From the simulation it is evident that the direction of the change is related to both school selection and student selection decisions. Serving fewer elementary schools but a higher proportion of students in those schools will increase average achievement scores. Similarly, serving a greater proportion of high school students in the schools already participating in Chapter 1 will increase average achievement. If more high schools are added to Chapter 1 and these additions are offset by cutting back on the number of elementary schools in the program, one might reach more lower achieving high school students but include a higher achieving group of students at the elementary level than was previously served. The preceding simulation shows that a district's decision to target Chapter 1 services at only the lower grades will not necessarily result in students being served who are less in need than if the program were targeted across the entire grade spectrum.

# APPENDIX F

## Data Tables for Changes in Sample Districts from 1981 to 1986

## Table F-1
## Case Listing of Data for Analysis of Recent Changes in Chapter 1 Targeting

| District | Grade Bands | | Number of Schools | | | | Subjects | | Program Allocations | | | Allocation Per Pupil | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | | T1 | Ch1 | | | | | | | |
| Code | 1981 | 1986 | 1981 | 1986 | 1981 | 1986 | 1981 | 1986 | 1981 | 1986 | 1986* | 1981 | 1986* |
| G1 | K-12 | 1-12 | | 83 | | 35 | R,M,LA | R,M,LA | 3,365,138 | 4,106,000 | 2,451,282 | $487 | $804 |
| D1 | PK-6 | PK-6 | | 95 | | 90 | R,M,LA | R,LA | 6,379,405 | 10,500,000 | 6,268,500 | 346 | 400 |
| C1 | K-8 | K-8 | 132 | 106 | 101 | 105 | R,M | R,LA | 5,537,852 | 7,404,006 | 4,420,192 | 793 | 599 |
| D2 | K-12 | K-12 | | 249 | | 135 | | | | 40,293,165 | 24,055,020 | | 481 |
| P2 | PK-12 | PK-12 | 99 | 89 | 66 | 52 | R,M,LA | R,M | 5,323,588 | 3,900,905 | 2,328,840 | 544 | 324 |
| S1 | K-8 | K-8 | | 102 | | 102 | R,M,LA | R,M,LA | 15,252,680 | 9,005,822 | 5,376,476 | 702 | 425 |
| L2 | K-8 | K-6 | 42 | 33 | 16 | 10 | R,M | R,M | 550,564 | 1,038,027 | 619,702 | 520 | 585 |
| R1 | K-12 | K-12 | | 47 | | 22 | R,M,LA | R,M,LA | 4,384,930 | 6,013,271 | 3,589,923 | 843 | 718 |
| S2 | K-8 | K-6 | 56 | 34 | 21 | 21 | R,M | R,M | 3,100,000 | 3,500,000 | 2,089,500 | 765 | 653 |
| L1 | PK-5 | K-5 | 33 | 19 | 15 | 15 | R,M,LA | R,M | 1,295,749 | 1,954,542 | 1,166,862 | 598 | 648 |
| S3 | K-5 | K-6 | 43 | 35 | 13 | 15 | R,M | R,M,LA | 1,197,460 | 1,842,237 | 1,099,815 | 502 | 418 |
| O1 | 1-12 | 1-8 | 87 | 78 | 60 | 52 | R,M | R,M,LA | 4,001,012 | 4,180,342 | 2,495,664 | 520 | 462 |
| S4 | 1-8 | 1-8 | 26 | 25 | 2 | 2 | R,M,LA | R,M,LA | 82,364 | 110,758 | 66,123 | 481 | 354 |
| C2 | 1-6 | 1-6 | 29 | 31 | 2 | 5 | R | R | 132,767 | 251,000 | 149,847 | 891 | 652 |
| B1 | | | | 16 | | 8 | | | 988,850 | 673,031 | 401,800 | | |
| M1 | 1-8 | K-12 | 8 | 11 | 7 | 11 | R,M | R,M,LA | 676,440 | 1,295,944 | 773,679 | 244 | 361 |
| H1 | 7-12 | 7-12 | 6 | 6 | 4 | 6 | R,M,LA | R,M,LA | | 180,000 | 107,460 | | 269 |
| E1 | K-6,HS | K-6,HS | 17 | 17 | 9 | 8 | R,LA | R | 305,418 | 443,550 | 264,799 | 475 | 530 |
| C4 | 1-8 | 1-8 | 12 | 12 | 11 | 11 | R | R | 544,727 | 335,000 | 199,995 | 689 | 267 |
| C5 | 2-9 | 2-9 | 6 | 6 | 4 | 4 | R,M | R,M,LA | 113,000 | 131,597 | 78,563 | 1,119 | 534 |
| S5 | PK-8 | PK-8 | 6 | 6 | 6 | 5 | | | 202,004 | 355,000 | 211,935 | | 474 |
| M2 | K-8 | 1-8 | 3 | 3 | 2 | 2 | R,M | R,M,LA | 156,120 | 138,317 | 82,575 | 507 | 241 |
| S6 | 2-4 | 2-3 | 3 | 3 | 3 | 3 | R | R | 142,000 | 89,000 | 53,133 | | 278 |
| B2 | 1-8 | K-8 | 7 | 5 | 7 | 5 | R | R | 121,151 | 152,712 | 91,169 | 757 | 365 |
| H2 | 1-12 | 2-9 | 2 | 2 | 2 | 2 | R,M,LA | R,M | 405,717 | 207,102 | 123,640 | 799 | 338 |
| O2 | K-8 | K,4-8 | 5 | 5 | 5 | 4 | R,M,LA | R,M,LA | 523,517 | 384,232 | 229,387 | 522 | 506 |
| P1 | K-6 | 1-6 | 2 | 2 | 1 | 1 | R,M | R,M | 66,253 | 41,629 | 24,853 | 656 | 234 |
| J1 | 1-6 | 1-8 | 1 | 2 | 1 | 2 | R | R,M | 9,824 | 41,454 | 24,748 | 378 | 619 |
| M3 | K-8 | K-8 | 1 | 1 | 1 | 1 | R | R | 4,529 | 16,247 | 9,699 | 906 | 606 |
| J2 | | 1-8 | | 5 | | 3 | | | | 94,122 | 56,191 | | 426 |

*Indicates values have been adjusted for inflation and are reported in terms of 1981 dollars.

Table F-2

National Salary Levels and Percentage Increase Since 1981 for Teachers and Aides by Year

| Year | Salaries |  | Percentage Increase Since 1981 |  |  |
|---|---|---|---|---|---|
|  | Teacher[a] | Aides[b] | Teachers | Aides | Combined |
| 1981 | $17,768 | $4.48 | -- | -- | -- |
| 1982 | 19,275 | 4.88 | 8.5 | 8.9 | 8.7 |
| 1983 | 20,809 | 5.28 | 17.1 | 17.9 | 17.5 |
| 1984 | 22,039 | 5.48 | 24.0 | 22.3 | 23.2 |
| 1985 | 23,587 | 5.89 | 32.7 | 31.5 | 32.1 |
| 1986 | 25,276 | 6.20 | 42.3 | 38.4 | 40.3 |

Source: The annual editions of the "National Survey of Salaries and Wages in Public Schools" conducted by Educational Research Services, Inc.

[a] Teacher salaries are annual rates.

[b] Aide salaries are hourly rates.